IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project

NOISE IMPACT ANALYSIS

CITY OF PERRIS

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
I-215	Interstate 215
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum level measured over the time interval
L_{min}	Minimum level measured over the time interval
LUCP	Land Use Compatibility Plan
MARB/IPA	March Air Reserve Base/Inland Port Airport
mph	Miles per hour
OPR	Office of Planning and Research
PVCC SP	Perris Valley Commerce Center Specific Plan
PPV	Peak particle velocity
Project	IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project
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 IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project development ("Project"). The Project site is located in the City of Perris on the northeast corner of Redlands Avenue and Rider Street within in the *Perris Valley Commerce Center Specific Plan* (PVCC SP) area. The Project is proposed to consist of two Warehouse buildings totaling approximately 1,352,736 square feet (sf) (Rider 2 is to consist of approximately 804,759 sf and Rider 4 is to consist of approximately 547,977) sf of Warehouse use (without cold storage) and the development and subsequent operations and maintenance of improvements to the Perris Valley Storm Drain (PVSD) Channel

At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. Therefore, for this analysis, it is assumed the Project will operate 24 hours, seven days a week. This study has been prepared to satisfy the City of Perris noise standards and the thresholds of significance identified in the *Perris Valley Commerce Center Specific Plan Environmental Impact Report* (PVCC SP EIR), and Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1; 2)

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 27 roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (3) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Existing with Project, and Existing plus Ambient plus Cumulative (EAC) with Project conditions.

The findings of the off-site traffic noise analysis indicate that one of the 27 off-site study area roadway segments will experience *potentially significant* Project-related traffic noise level increases on roadway segment 15 (Harley Knox Boulevard east of Perris Boulevard) for Existing plus Project, and the Existing plus Ambient plus Cumulative (EAC) with Project conditions. To reduce the *potentially significant* Project traffic noise level increases potential noise mitigation measures are identified in this analysis. The potential mitigation measures include rubberized asphalt hot mix pavement and off-site noise barriers for existing non-conforming residential use adjacent to impacted roadway segments. However, since these noise mitigation measures would not eliminate the Project-related off-site traffic noise level increases, the off-site traffic noise level impacts at adjacent noise-sensitive land use are considered a *significant and unavoidable* impact. This finding is consistent with the PVCC SP EIR, where buildout conditions of the Specific Plan were shown to result in *significant* off-site traffic noise impacts. (1)

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected noise sources from the IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project site, this analysis estimates the Project-related operational noise levels at nearest receiver locations. The normal activities associated with the proposed IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project are anticipated to generally include loading dock activity, roof-top air conditioning units, parking lot vehicle movements and trash enclosure activity. The operational noise analysis shows that the Project-related operational noise levels due to the loading dock activity, roof-top air conditioning units, parking lot vehicle movements and trash enclosure activity will satisfy the City of Perris Municipal Code and General Plan exterior noise level standards at all nearest sensitive receiver locations.

In addition, this analysis demonstrates that the Project will contribute *less than significant* operational noise levels to the existing ambient noise environment during the daytime and nighttime hours at all nearest sensitive receiver locations. Therefore, the operational noise level impacts associated with the proposed 24-hour seven days per week Project activities will be *less than significant*.

OPERATIONAL VIBRATION ANALYSIS

The operation of the Project site will include heavy trucks transiting on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Since trucks rarely create vibration that exceed 70 VdB (unless there are bumps due to frequent potholes in the road) (4 p. 113), it is expected that the on-site heavy trucks will be travelling at very low speeds so activity will satisfy the maximum-acceptable vibration criteria of 78 VdB for daytime residential uses, and therefore, will be *less than significant*.

CONSTRUCTION NOISE ANALYSIS

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site when certain activities occur at the Project site boundary. Using sample reference noise levels to represent the planned construction activities of the IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project site, this analysis estimates the Project-related construction noise levels at nearest receiver locations. No pile driving is expected as part of the Project construction activities.

The construction noise analysis shows that the nearest receiver locations will exceed the City of Perris Municipal Code 80 dBA L_{max} significance threshold for construction activity at receiver locations R2 and R7. Therefore, the unmitigated noise impact due to Project construction activities is considered *potentially significant*. All other receiver locations will experience *less than significant* construction noise levels. Since receiver locations R2 and R7 will experience *potentially significant* construction noise level impacts, the following temporary construction noise mitigation measure is required:

- Provide a minimum 100-foot buffer zone separating large construction equipment (e.g. dozers, graders, scrapers, etc.) from receiver locations R2 and R7.

With the required minimum 100-foot buffer zone separating large construction equipment (e.g. dozers, graders, scrapers, etc.) from receiver locations R2 and R7, the Project construction noise levels will satisfy the City of Perris 80 dBA L_{max} construction noise level threshold. Therefore, the Project construction noise levels are considered *less than significant* with mitigation.

CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. The analysis shows that the unmitigated Project-construction vibration levels of up to 74.8 VdB at residential receiver locations will remain below the Federal Transit Administration (FTA) 78 VdB threshold at all receiver locations, and are therefore, considered a *less than significant* impact. Further, vibration levels at the site of the closest receiver are unlikely to be sustained during the entire construction period and will likely only occur when heavy construction equipment is operating at the Project site perimeter.

Although Project construction noise and vibration impacts will be *less than significant*, the Project is required to comply with the following construction-related mitigation measures (MM) from the PVCC Specific Plan Environmental Impact Report:

MM Noise 1 *During all project site excavation and grading on site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturer's standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.*

MM Noise 2 *During construction, stationary construction equipment, stockpiling and vehicle staging areas would be placed a minimum of 446 feet away from the closest sensitive receptor.*

MM Noise 3 *No combustion-powered equipment, such as pumps or generators, shall be allowed to operate within 446 feet of any occupied residence unless the equipment is surrounded by a noise protection barrier.*

MM Noise 4 *Construction contractors of implementing development projects shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass sensitive land uses or residential dwellings.*

SIGNIFICANCE FINDINGS

The results of this IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact before and after any required mitigation measures from the PVCC SP EIR.

TABLE ES-1: SUMMARY OF SIGNIFICANCE FINDINGS

Analysis	Significance Findings	
	PVCC EIR	Proposed Project
Off-Site Traffic Noise	*Significant*	*Significant*
On-Site Aircraft Noise	*Less Than Significant*	*Less Than Significant*
Operational Noise	*Less Than Significant*	*Less Than Significant*
Operational Vibration	*Less Than Significant*	*Less Than Significant*
Construction Noise[1]	*Less Than Significant*	*Less Than Significant*
Construction Vibration[1]	*Less Than Significant*	*Less Than Significant*

[1] Although Project construction noise and vibration impacts will be less than significant, the Project is required to comply with mitigation measures (MM) Noise 1 through MM Noise 4 from the PVCC Specific Plan Environmental Impact Report.
"n/a" = No new significant impacts.

1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project ("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 traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term operational and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The Project site is located in the City of Perris on the northeast corner of Redlands Avenue and Rider Street within in the *Perris Valley Commerce Center Specific Plan* (PVCC SP) area, as shown on Exhibit 1-A. The March Air Reserve Base/Inland Port Airport (MARB/IPA) is located approximately 2 to 2.5 miles northwest of the Project site, and the Interstate 215 (I-215) Freeway is located roughly 1.8 miles west of the Project site. Existing noise-sensitive land uses in the Project study area include Morgan Park and residences located northeast, east, and southeast of the Project site across the Perris Valley Storm Drain Channel; and existing, non-conforming, residences located west and south of the Project site within areas defined by the PVCC SP and City of Perris Zoning Map as light industrial-designated land use. (5) (1)

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of two Warehouse buildings totaling approximately 1,352,736 square feet (sf) (Rider 2 is to consist of approximately 804,759 sf and Rider 4 is to consist of approximately 547,977) sf of Warehouse use (without cold storage) and the development and subsequent operations and maintenance of improvements to the Perris Valley Storm Drain (PVSD) Channel. Exhibit 1-B shows the Project site plan.

At the time this noise analysis was prepared the future tenants of the proposed Project were unknown. To present the potential worst-case noise conditions, this analysis assumes the Project would be operational 24 hours per day, seven days per week. It is expected that the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays.

The on-site Project-related noise sources are expected to generally include: loading dock activity, roof-top air conditioning units, parking lot vehicle movements and trash enclosure activity. This noise analysis is intended to describe noise level impacts associated with the expected typical industrial warehouse activities at the Project site. No cold storage is planned at the Project site.

EXHIBIT 1-A: LOCATION MAP

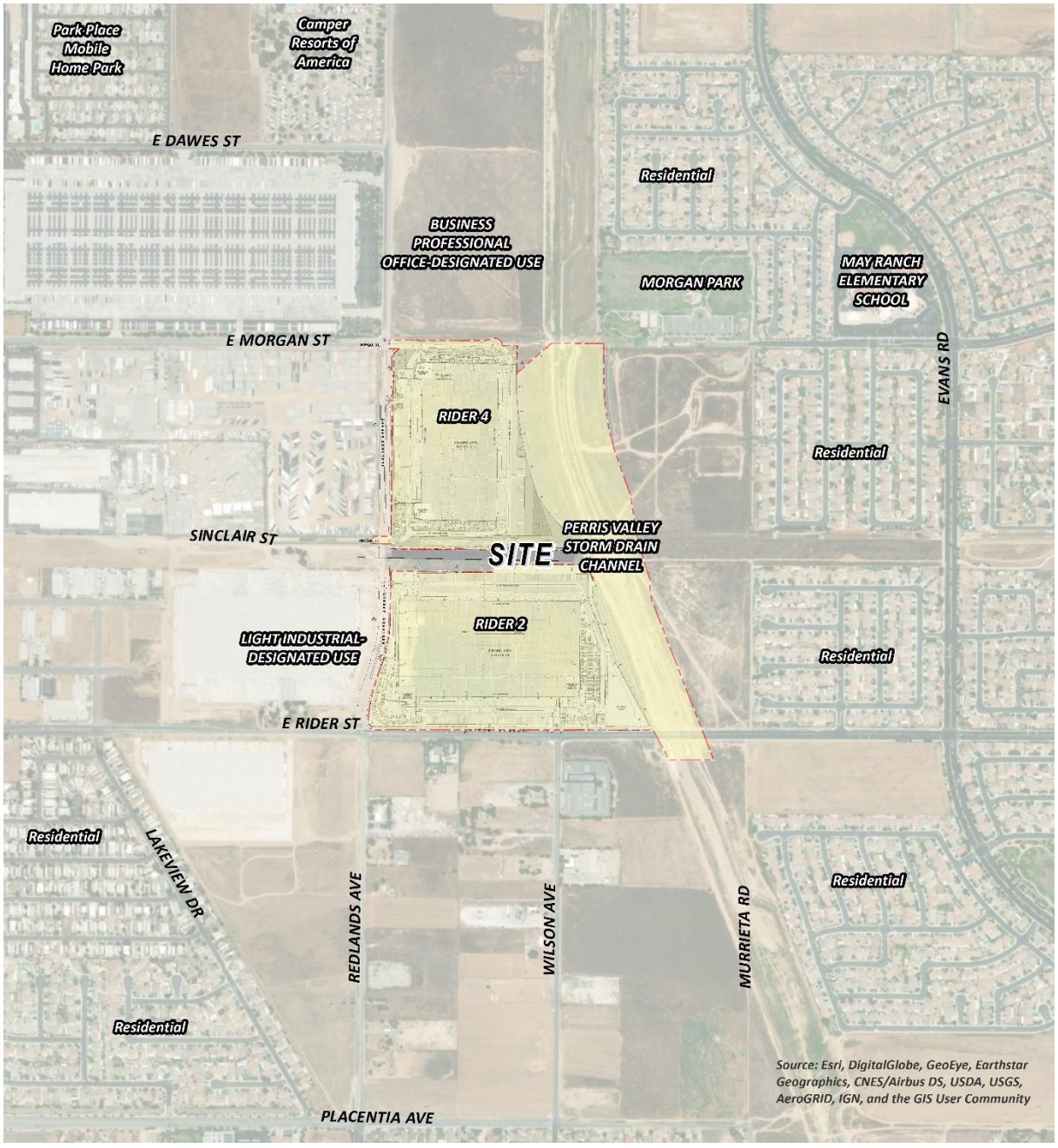
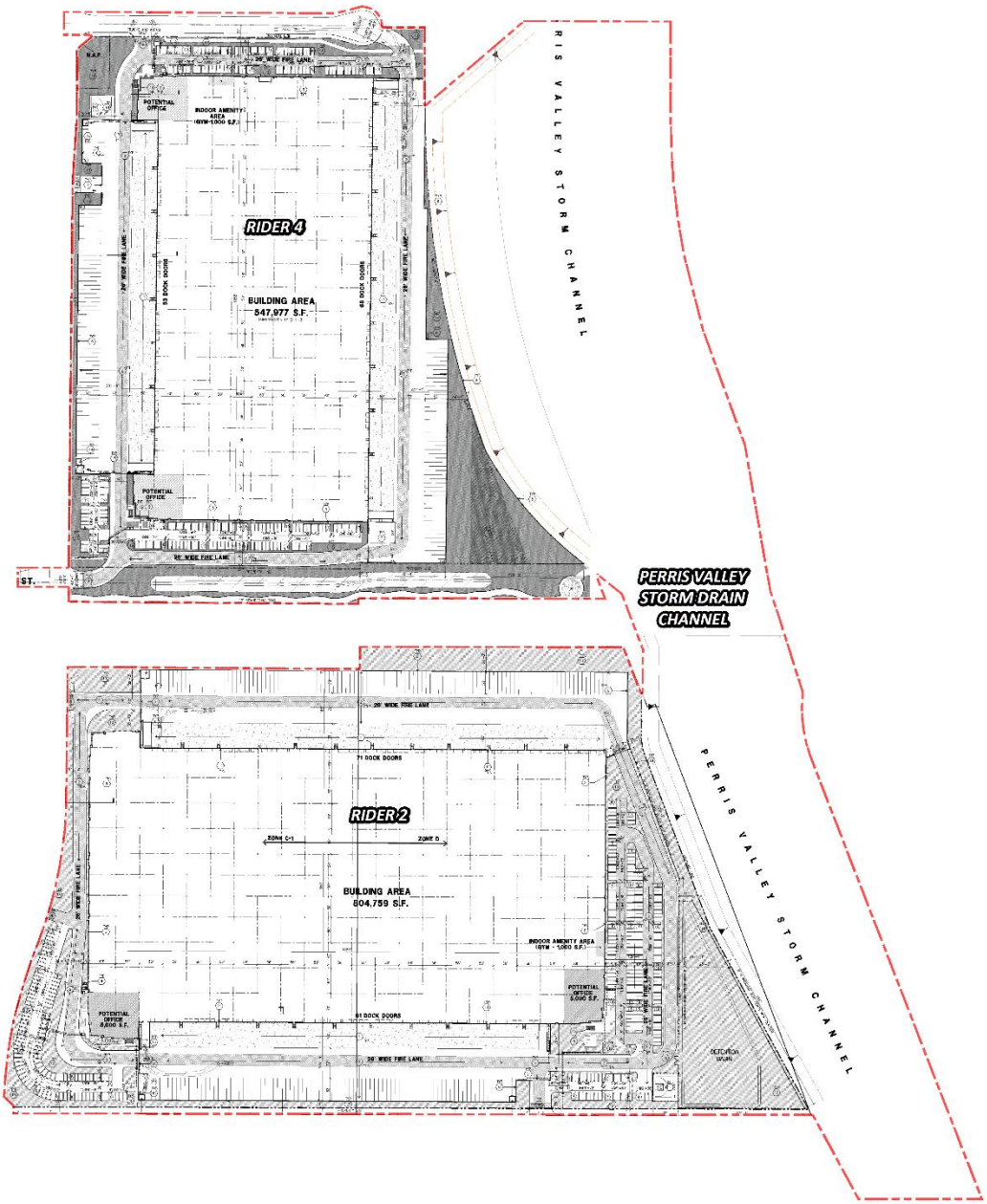


EXHIBIT 1-B: SITE PLAN



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2 FUNDAMENTALS

For consistency with the PVCC SP EIR, the following noise fundamentals discussion was taken from the EIR, Section 4.9 Noise, Page 4.9-2: (1)

The PVCC SP EIR defines noise *as unwanted or objectionable sound. The effect of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. The unit of measurement used to describe a noise level is the decibel (dB). However, since the human ear is not equally sensitive to all frequencies within the sound spectrum, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA. Decibels are measured on a logarithmic scale which quantifies sound intensity in a manner that is similar to the Richter scale used for earthquake magnitudes. In the case of noise, a doubling of the energy from a noise source, such as the doubling of a traffic volume, would increase the noise level by 3 dBA; a halving of the energy would result in a 3 dBA decrease.*

The PVCC SP EIR further states that *average noise levels over a period of minutes or hours are usually expressed as dB L_{eq} or the equivalent noise level for that period of time. For example, $L_{eq(3)}$ would represent a three hour average. When no time-period is specified, a one-hour average is assumed. Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (Ldn). CNEL is a 24-hour weighted average measure of community noise. The computation of CNEL adds 5 dBA to the average hourly noise levels between 7 p.m. and 10 p.m. (evening hours), and 10 dBA to the average hourly noise levels between 10p.m. to 7 a.m. (nighttime hours). This weighting accounts for the increased human sensitivity to noise in the evening and nighttime hours. Ldn is a very similar 24-hour weighted average which weighs only the nighttime hours and not the evening hours. CNEL is normally about 1 dB higher than Ldn for typical traffic and other community noise levels.*

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3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (6) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (7) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available, and the noise level exceeds 65 dBA L_{eq} for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

As further discussed in Section 3.7, the Project site is located outside of the 65 dBA CNEL noise level contour boundaries of the March Air Reserve Base/Inland Port Airport (MARB/IPA). In addition, the Project site is located outside of the 65 dBA CNEL noise level contours of the I-215 Freeway. (8) Therefore, no further analysis is provided in relation to the 2019 State of California's Green Building Standards Code requirements.

3.3 CITY OF PERRIS GENERAL PLAN

The City of Perris has adopted a Noise Element of the General Plan (8) to control and abate environmental noise, and to protect the citizens of Perris from excessive exposure to noise. The Noise Element specifies the maximum allowable unmitigated exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports, and railroads. In addition, the Noise Element identifies noise polices and implementation measures designed to protect, create, and maintain an environment free from noise that may jeopardize the health or welfare of sensitive receptors, or degrade quality of life.

The noise standards identified in the City of Perris General Plan are guidelines to evaluate the acceptability of the transportation related noise level impacts. These standards are based on the Governor's Office of Planning and Research (OPR) and are used to assess the long-term traffic noise impacts on land uses. According to the City's Land Use Compatibility for Community Noise Exposure (Exhibit N-1), noise-sensitive land uses such as single-family residences are *normally acceptable* with exterior noise levels below 60 dBA CNEL and *conditionally acceptable* with noise levels below 65 dBA CNEL. Industrial uses, such as the Project, are considered *normally acceptable* with exterior noise levels of up to 70 dBA CNEL, and *conditionally acceptable* with exterior noise levels between 70 to 80 dBA CNEL. (8)

3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project, operational noise such as the expected loading dock activity, roof-top air conditioning units, parking lot vehicle movements and trash enclosure activity are typically evaluated against standards established under a City's Municipal Code.

The City of Perris Municipal Code, Chapter 7.34 *Noise Control*, Section 7.34.040, establishes the permissible noise level at any point on the property line of the affected residential receiver. Therefore, for residential properties, the exterior noise level shall not exceed a maximum noise level of 80 dBA L_{max} during daytime hours (7:01 a.m. to 10:00 p.m.) and shall not exceed a maximum noise level of 60 dBA L_{max} during the nighttime hours (10:01 p.m. to 7:00 a.m.), as shown on Table 3-1. (9) The City of Perris Municipal Code is included in Appendix 3.1.

Additional exterior noise level standards are identified in the City of Perris General Plan Noise Element Implementation Measure V.A.1 which requires that new industrial facilities within 160 feet of the property line of existing noise-sensitive land uses must demonstrate compliance with a 60 dBA CNEL exterior noise level standard. Table 3-1 shows the Municipal Code and General Plan standards used in this analysis to evaluate the potential operational noise levels from the Project.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

Jurisdiction	Land Use	Time Period	Noise Level Standard (dBA)
City of Perris	Residential[1]	Daytime (7:01 a.m. - 10:00 p.m.)	80 dBA L_{max}
		Nighttime (10:01 p.m. - 7:00 a.m.)	60 dBA L_{max}
	Within 160 Feet of PL[2]	24-Hours	60 dBA CNEL

[1] Source: City of Perris Municipal Code, Sections 7.34.040 & 7.34.050 (Appendix 3.1).
[2] Source: City of Perris General Plan Noise Element, Implementation Measure V.A.1.

3.5 CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of the IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project site, noise from construction activities are typically evaluated against standards established under a City's Municipal Code. The City of Perris Municipal Code, Section 7.34.060, identifies the City's construction noise standards and permitted hours of construction activity (refer to Table 3-2). Further, the City of Perris Municipal Code, Section 7.34.060, noise level standard of 80 dBA L_{max} at residential properties shall apply to the noise-sensitive receiver locations located in the City of Perris. (9)

TABLE 3-2: CONSTRUCTION NOISE STANDARDS

Jurisdiction	Permitted Hours of Construction Activity	Construction Noise Level Standard
City of Perris[1]	7:00 a.m. to 7:00 p.m. on any day except Sundays and legal holidays (with the exception of Columbus Day and Washington's birthday).	80 dBA L_{max}

[1] Source: City of Perris Municipal Code, Section 7.34.060 (Appendix 3.1).

3.6 VIBRATION STANDARDS

The City of Perris has not identified or adopted specific vibration level standards. However, the United States Department of Transportation Federal Transit Administration (FTA) provides guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines allow 78 VdB for residential uses and buildings where people normally sleep. (4) Operational and construction activities 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. Large bulldozers and loaded trucks can cause perceptible vibration levels proximate receptors. The FTA guidelines of 78 VdB for sensitive land uses provide a

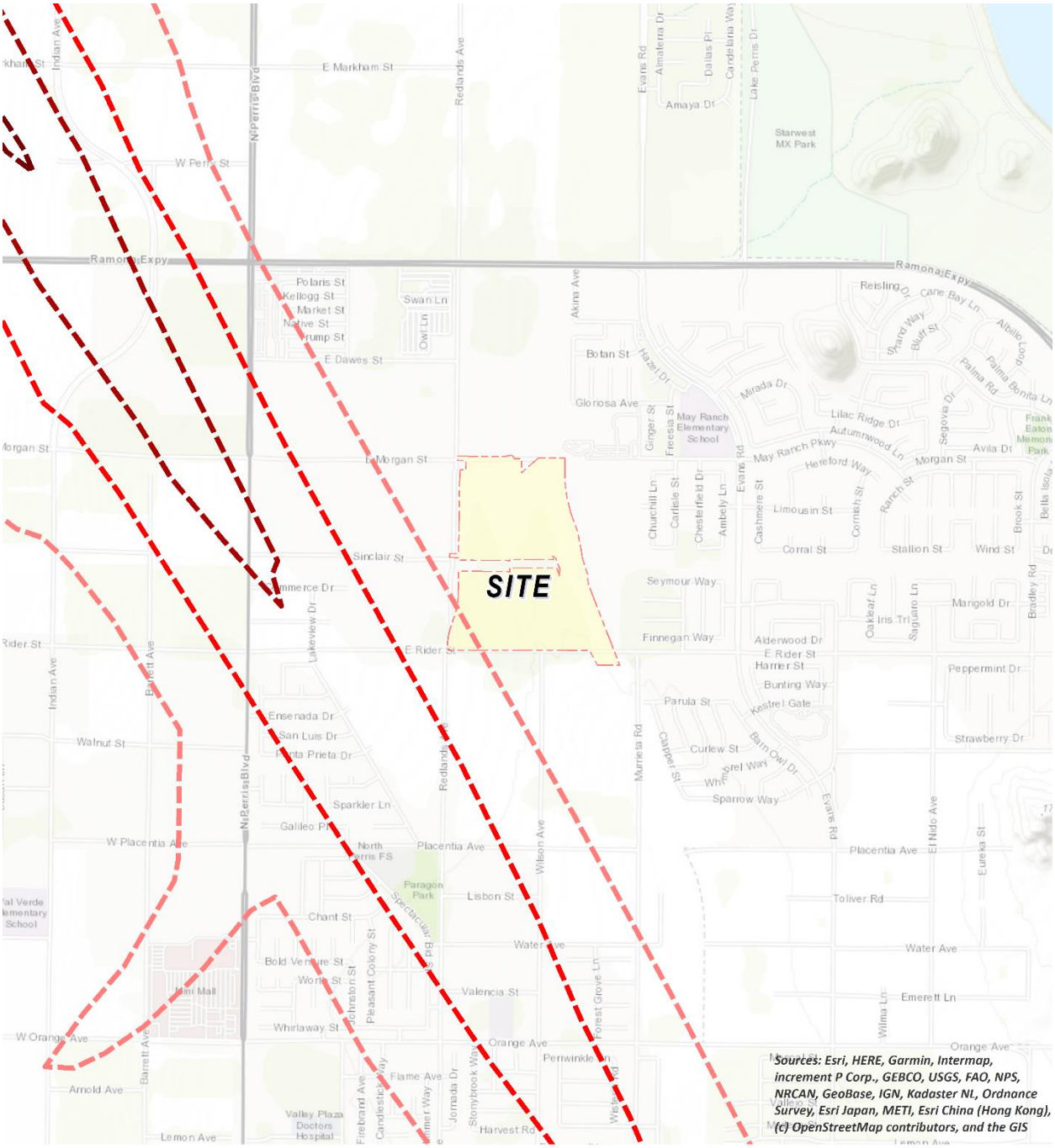
substantiated basis for determining the relative significance of potential Project-related vibration impacts due to on-site operational and construction activities.

3.7 MARCH AIR RESERVE BASE/INLAND PORT AIRPORT LAND USE COMPATIBILITY

The March Air Reserve Base/Inland Port Airport (MARB/IPA) is located approximately 2 to 2.5 miles northwest of the Project site. The *March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan* (MARB/IPA LUCP) includes the policies for determining the land use compatibility of the Project, although it is located further than 2 miles of an airport runway. The MARB/IPA, Map MA-1, indicates that the Project site is located within Compatibility Zones C-1 and D, and the Table MA-1 Compatibility Zone Factors indicates that this area is considered to have a *moderate to low* noise impact, and is mostly within the 55 dBA CNEL contour with a portion of the southwestern part of the Rider 2 site within 60 dBA CNEL contour. Further, the Basic Compatibility Criteria, listed in Table MA-2 of the MARB/IPA LUCP identifies no prohibited uses other than those that would pose a safety risk due to building height. (11) The MARB/IPA LUCP does not identify industrial-use specific noise compatibility standards, and therefore, the Governor's Office of Planning and Research (OPR) Land Use Compatibility for Community Noise Exposure, previously discussed in Section 3.3, is used to assess potential aircraft-related noise levels at the Project site. The OPR guidelines indicate that industrial uses, such as the Project, are considered *normally acceptable* with exterior noise levels of up to 70 dBA CNEL. (6)

The noise contour boundaries of MARB/IPA are presented on Exhibit 3-A of this report and show that the Project is considered *normally acceptable* land use since it is located mostly within the 55 dBA CNEL contour with a portion of the southwestern part of the Rider 2 site within 60 dBA CNEL contour. Further, Table MA-2 indicates that no uses are prohibited in this area except for those which would pose hazards to flights.

EXHIBIT 3-A: MARB/IPA FUTURE AIRPORT NOISE CONTOURS



LEGEND:

Unmitigated Airport Noise Contour Boundaries

55 dBA CNEL
60 dBA CNEL
65 dBA CNEL
70 dBA CNEL
75 dBA CNEL

Source: Riverside County Airport Land Use Compatibility Plan, MA-4

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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. (2) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

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

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

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

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

4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

The closest airport which would require additional noise analysis under CEQA Appendix G Guideline C is the MARB/IPA. As previously described in Section 3.7, the Project is located in Compatibility Zones C-1 and D, and Table MA-1 of the MARB/IPA LUCP indicates that the noise impact is considered *low*, and Table MA-2 indicates that no uses are prohibited in this area except for those which would pose hazards to flights. Therefore, the potential impacts under CEQA Appendix G Guideline C are *less than significant* and are not further analyzed in this noise study.

4.2 PVCC SP EIR THRESHOLDS

As identified in the PVCC SP EIR, sensitive receivers are areas where humans are participating in activities that may be subject to the stress of significant interference from noise and often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. Other receivers include office and industrial buildings, which are not considered as sensitive as single-family homes, but are still protected by City of Perris land use compatibility standards, as discussed below.

Noise level increases at nearest receiver locations resulting from the Project are evaluated based on the PVCC SP EIR Thresholds described below at nearest receiver locations. Further, CEQA requires that consideration be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (12)

According to the PVCC SP EIR, *there is no official "industry standard" of determining significance of noise impacts. However, typically, a jurisdiction will identify either 3 dBA or 5 dBA increase as being the threshold because these levels represent varying levels of perceived noise increases.* The PVCC SP EIR indicates that a 5 dBA noise level increase is considered *discernable to most people in an exterior environment* when the resulting noise levels are below 60 dBA. Further, it identifies a 3 dBA increase threshold when the noise levels already exceed 60 dBA. In addition, according to the PVCC SP EIR, an increase of 5 dBA or more above without Project noise levels is considered a significant impact at all other sensitive land uses. (1)

4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-1 shows the significance criteria summary matrix. The following significance criteria are based upon the applicable provisions of the PVCCSP EIR, the City of Perris Noise Element and Section 7.34.040 of the Perris Municipal Code.

OFF-SITE TRAFFIC NOISE

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic based on the following PVCC SP EIR significance criteria.

- When the resulting noise levels at noise-sensitive land uses (e.g. residential, etc.)
    - are less than 60 dBA CNEL and the Project creates a 5 dBA CNEL or greater Project-related noise level increase; or
    - exceed 60 dBA CNEL and the Project creates a 3 dBA CNEL or greater Project-related noise level increase (PVCC SP EIR, Page 4.9-20).

OPERATIONAL NOISE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against the stationary source City of Perris L_{max} exterior noise level standards in the Municipal Code and the 24-hour CNEL noise level criteria for new industrial facilities identified in City of Perris General Plan Noise Element.

- If Project-related operational noise levels
    - exceed the 80 dBA L_{max} daytime or 60 dBA L_{max} nighttime noise level standards at the nearest sensitive receiver locations in the City of Perris (City of Perris Municipal Code, Section 7.34.040); or
    - exceed the 60 dBA CNEL exterior noise level standard at residential receiver locations within 160 feet of the Project site, in the City of Perris (City of Perris General Plan Noise Element, Implementation Measure V.A.1).
- If the resulting noise levels at the nearest noise-sensitive receivers near the Project site:
    - are less than 60 dBA L_{eq} and the Project creates a 5 dBA L_{eq} or greater Project-related noise level increase; or

- exceed 60 dBA L_{eq} and the Project creates a 3 dBA L_{eq} or greater Project-related noise level increase (PVCC SP EIR, Page 4.9-20).

- If long-term project generated operational source vibration levels could exceed the FTA maximum acceptable vibration standard of 78 vibration decibels (VdB) at noise-sensitive receiver locations. (FTA Transit Noise and Vibration Impact Assessment)

CONSTRUCTION NOISE AND VIBRATION

Noise from construction activities are typically evaluated against standards established under a City's Municipal Code. In addition, since the City of Perris has not identified or adopted specific vibration level standards guidelines for maximum-acceptable vibration criteria for different types of land uses were derived from the United States Department of Transportation Federal Transit Administration (FTA)

- If Project-related construction activities create noise levels at sensitive receiver locations in the City of Perris which exceed the construction noise level limit of 80 dBA L_{max} (City of Perris Municipal Code7.34.060).

- If short-term project generated construction source vibration levels could exceed the FTA maximum acceptable vibration standard of 78 vibration decibels (VdB) at noise-sensitive receiver locations. (FTA Transit Noise and Vibration Impact Assessment).

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site	Noise-Sensitive[1]	if resulting noise level is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		if resulting noise level is > 60 dBA CNEL	≥ 3 dBA CNEL Project increase	
Operational	Perris	At residential land use[2]	80 dBA L_{max}	60 dBA L_{max}
		Within 160 Feet of residential use[3]	60 dBA CNEL	
	Noise-Sensitive	if resulting noise level is < 60 dBA L_{eq}[1]	≥ 5 dBA L_{eq} Project increase	
		if resulting noise level is > 60 dBA L_{eq}[1]	≥ 3 dBA L_{eq} Project increase	
		Vibration Level Threshold[4]	78 VdB	
Construction	Noise-Sensitive	Noise Level Threshold[5]	80 dBA L_{max}	
		Vibration Level Threshold[4]	78 VdB	

[1] Source: PVCC SP EIR, Page 4.9-20).
[2] Source: City of Perris Municipal Code, Section 7.34.040 (Appendix 3.1).
[3] Source: City of Perris General Plan Noise Element, Implementation Measure V.A.1.
[4] Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.
[5] Source: City of Perris Municipal Code, Section 7.34.060 (Appendix 3.1).
"Daytime" = 7:01 a.m. - 10:00 p.m.; "Nighttime" = 10:01 p.m. - 7:00 a.m.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, eight 24-hour noise level measurements were taken at potential receiver locations in the Project study area. The measurement locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Thursday, July 19th, 2018. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (13)

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest 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*. (14) Further, FTA guidance states, t*hat it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community*. (4)

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. (4) 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 used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the receiver locations allows for a

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

5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the average or equivalent sound levels (L_{eq}). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:01 a.m. to 10:00 p.m.) and nighttime (10:01 p.m. to 7:00 a.m.) noise levels at each noise level measurement location consistent with the City of Perris Municipal Code. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels north of the Project site on Redlands Avenue adjacent to an existing, RV park use, and an existing industrial use. The noise level measurements collected show an overall 24-hour exterior noise level of 67.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 62.9 dBA L_{eq} with an average nighttime noise level of 59.2 dBA L_{eq}.
- Location L2 represents the noise levels east of the Project site at the southwest corner of Morgan Park. The noise level measurements collected show an overall 24-hour exterior noise level of 55.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 53.9 dBA L_{eq} with an average nighttime noise level of 44.9 dBA L_{eq}.
- Location L3 represents the noise levels east of the Project site adjacent to existing residences west of Evans Road. The noise level measurements collected show an overall 24-hour exterior noise level of 61.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 56.1 dBA L_{eq} with an average nighttime noise level of 55.3 dBA L_{eq}.
- Location L4 represents the noise levels east of the Project site adjacent to existing residences north of Rider Street. The noise level measurements collected show an overall 24-hour exterior noise level of 57.7 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 55.9 dBA L_{eq} with an average nighttime noise level of 48.6 dBA L_{eq}.
- Location L5 represents the noise levels southeast of the Project site adjacent to residences on Parula Street. The noise level measurements collected show an overall 24-hour exterior noise level of 56.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 55.6 dBA L_{eq} with an average nighttime noise level of 48.0 dBA L_{eq}.
- Location L6 represents the noise levels south of the Project site across Rider Street adjacent to a non-conforming existing residential home. The noise level measurements collected show an overall 24-hour exterior noise level of 66.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 63.7 dBA L_{eq} with an average nighttime noise level of 59.0 dBA L_{eq}.
- Location L7 represents the noise levels south of the Project site on the southeast corner of Redlands Avenue and Rider Street near non-conforming existing residences. The noise level measurements collected show an overall 24-hour exterior noise level of 71.4 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 67.7 dBA L_{eq} with an average nighttime noise level of 63.4 dBA L_{eq}.

- Location L8 represents the noise levels southwest of the Project site adjacent to Rider Street and nearest non-conforming residences. The noise level measurements collected show an overall 24-hour exterior noise level of 71.4 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 67.6 dBA L_{eq} with an average nighttime noise level of 63.7 dBA L_{eq}.

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

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with the arterial roadway network (i.e., Redlands Avenue, Dawes Street, Morgan Street, Rider Street, and local residential roads). This includes the auto and heavy truck activities near the noise level measurement locations. Additional background noise sources in the Project study area include aircraft overflight noise from the MARB/IPA. The 24-hour existing noise level measurements are shown on Table 5-1.

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

Location[1]	Distance to Project Boundary (Feet)	Description	Energy Average Noise Level (dBA L_{eq})[2]		CNEL
			Daytime	Nighttime	
L1	1,346'	Located north of the Project site on Redlands Avenue adjacent to an existing RV park and industrial use.	62.9	59.2	67.5
L2	30'	Located east of the Project site at the southwest corner of Morgan Park.	53.9	44.9	55.2
L3	944'	Located east of the Project site adjacent to existing residence west of Evans Road.	56.1	55.3	61.9
L4	509'	Located east of the Project site adjacent to existing residence north of Rider Street.	55.9	48.6	57.7
L5	567'	Located southeast of the Project site adjacent to residence on Parula Street.	55.6	48.0	56.9
L6	278'	Located south of the Project site across Rider Street adjacent to an existing residence.	63.7	59.0	66.9
L7	107'	Located south of the Project site on the southeast corner of Redlands Avenue and Rider Street near existing residences	67.7	63.4	71.4
L8	538'	Located southwest of the Project site adjacent to Rider Street and nearest residences.	67.6	63.7	71.4

[1] See Exhibit 5-A for the noise level measurement locations.
[2] The long-term 24-hour measurement printouts are included in Appendix 5.2.
"Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model FHWA-RD-77-108. (15) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (16) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (17)

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 27 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications according to the City of Perris *General Plan Circulation Element*, and the posted vehicle speeds. According to the *IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Traffic Impact Analysis* prepared by Urban Crossroads, Inc., the Project is expected to generate a total of approximately 1,926 trip-ends per day (actual vehicles). (18) The Project trip generation includes 1,304 passenger cars and 622 truck trip-ends per day from the proposed buildings within the Project site. The ADT volumes used in this study are presented on Table 6-2 were obtained from the *Traffic Impact Analysis* for the following traffic conditions: Existing, Existing with Project, and Existing plus Ambient plus Cumulative (EAC) with Project

This noise study relies on the net Project trips to accurately account for the effect of individual passenger cars and truck trips on the study area roadway network. Consistent with the traffic study, the off-site traffic noise analysis maintains a peak hour to average daily traffic (peak-to-daily) relationship of approximately 6.83%. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Adjacent Planned Land Use (Existing if Different)[1]	Distance from Centerline to Nearest Adjacent Land Use (Feet)[2]	Posted Speed Limit (mph)
1	Perris Bl.	n/o Harley Knox Bl.	Commercial	64'	45
2	Perris Bl.	s/o Harley Knox Bl.	Commercial	64'	45
3	Perris Bl.	n/o Ramona Expwy.	Commercial	64'	45
4	Perris Bl.	s/o Ramona Expwy.	Commercial	64'	45
5	Perris Bl.	s/o Morgan St.	Light Industrial	64'	45
6	Perris Bl.	s/o Rider St.	Light Industrial (Residential)	64'	45
7	Redlands Av.	s/o Harley Knox Bl.	Light Industrial	47'	40
8	Redlands Av.	s/o Markham St.	Light Industrial	47'	40
9	Redlands Av.	s/o Ramona Expwy.	Commercial (Res.)	47'	40
10	Redlands Av.	s/o Rider St.	Light Industrial (Residential)	47'	40
11	Harley Knox Bl.	e/o Western Wy.	Light Industrial	64'	45
12	Harley Knox Bl.	e/o Patterson Av.	General Industrial	64'	45
13	Harley Knox Bl.	e/o Webster Av.	General Industrial	64'	45
14	Harley Knox Bl.	e/o Indian Av.	Light Industrial	64'	50
15	Harley Knox Bl.	e/o Perris Bl.	Commercial (Non-Conforming Res.)	64'	45
16	Markham St.	w/o Redlands Av.	Light Industrial	47'	35
17	Ramona Expwy.	w/o Nevada Av.	Commercial	92'	50
18	Ramona Expwy.	e/o Nevada Av.	Commercial	92'	50
19	Ramona Expwy.	e/o Webster Av.	Commercial/Light Industrial	92'	50
20	Ramona Expwy.	e/o Indian Av.	Light Industrial	92'	50
21	Ramona Expwy.	e/o Perris Bl.	Commercial (Residential)	92'	50
22	Ramona Expwy.	w/o Redlands Av.	Commercial (Residential)	92'	50
23	Ramona Expwy.	e/o Redlands Av.	Office	92'	50
24	Morgan St.	e/o Perris Bl.	Light Industrial	47'	40
25	Rider St.	e/o Perris Bl.	Light Industrial (Residential)	47'	45
26	Rider St.	w/o Redlands Av.	Light Industrial (Residential)	47'	45
27	Rider St.	e/o Redlands Av.	Light Industrial (Residential)	47'	45

[1] Sources: Perris Valley Commerce Center Land Use Plan and Nearmap aerial imagery.
[2] Distance to adjacent land use is based upon the right-of-way distances for each functional roadway classification provided in the General Plan Circulation Element.
"Res." = Residential

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]			
			Existing (2018)		EA plus Cumulative (EAC)	
			Without Project	With Project	Without Project	With Project
1	Perris Bl.	n/o Harley Knox Bl.	37,951	38,147	43,311	43,507
2	Perris Bl.	s/o Harley Knox Bl.	29,867	30,063	33,448	33,644
3	Perris Bl.	n/o Ramona Exwy.	28,741	28,937	32,683	32,879
4	Perris Bl.	s/o Ramona Exwy.	24,036	24,753	29,400	30,117
5	Perris Bl.	s/o Morgan St.	25,640	26,031	30,598	30,989
6	Perris Bl.	s/o Rider St.	27,553	27,749	31,700	31,896
7	Redlands Av.	s/o Harley Knox Bl.	4,829	5,450	8,417	9,038
8	Redlands Av.	s/o Markham St.	5,338	5,959	8,957	9,578
9	Redlands Av.	s/o Ramona Exwy.	1,882	2,829	4,375	5,322
10	Redlands Av.	s/o Rider St.	3,872	3,937	4,180	4,245
11	Harley Knox Bl.	e/o Western Wy.	20,457	21,078	33,356	33,977
12	Harley Knox Bl.	e/o Patterson Av.	18,343	18,964	30,578	31,199
13	Harley Knox Bl.	e/o Webster Av.	17,217	17,838	25,942	26,563
14	Harley Knox Bl.	e/o Indian Av.	10,660	11,281	15,136	15,757
15	Harley Knox Bl.	e/o Perris Bl.	4,906	5,527	8,625	9,246
16	Markham St.	w/o Redlands Av.	679	679	720	720
17	Ramona Exwy.	w/o Nevada Av.	45,711	46,363	58,404	59,056
18	Ramona Exwy.	e/o Nevada Av.	42,502	43,154	55,000	55,652
19	Ramona Exwy.	e/o Webster Av.	38,445	39,097	50,081	50,733
20	Ramona Exwy.	e/o Indian Av.	39,309	39,961	48,646	49,298
21	Ramona Exwy.	e/o Perris Bl.	35,282	35,412	44,094	44,224
22	Ramona Exwy.	w/o Redlands Av.	37,257	37,387	40,750	40,880
23	Ramona Exwy.	e/o Redlands Av.	41,716	41,912	45,361	45,557
24	Morgan St.	e/o Perris Bl.	1,311	1,637	1,606	1,932
25	Rider St.	e/o Perris Bl.	12,357	12,944	16,275	16,862
26	Rider St.	w/o Redlands Av.	12,392	12,979	16,312	16,899
27	Rider St.	e/o Redlands Av.	15,258	15,714	18,127	18,583

[1] Source: Project Traffic Impact Analysis, Urban Crossroads, Inc.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits[1]			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	68.17%	12.26%	19.57%	100.00%
Medium Trucks	69.75%	8.81%	21.44%	100.00%
Heavy Trucks	58.32%	5.05%	36.63%	100.00%

[1] Based on existing ADT counts by vehicle type taken on 5/24/2018 on Perris Boulevard north of Rider Street (Project Traffic Impact Analysis, Urban Crossroads, Inc.). All 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.

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.

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

TABLE 6-4: WITHOUT PROJECT CONDITIONS VEHICLE MIX

Classification	Total Daily % Traffic Flow[1]			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	91.21%	6.78%	2.01%	100.00%

[1] Based on existing ADT counts by vehicle type taken on 5/24/2018 on Perris Boulevard north of Rider Street (Project Traffic Impact Analysis, Urban Crossroads, Inc.). All values rounded to the nearest one-hundredth.

TABLE 6-5: EXISTING WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Perris Bl.	n/o Harley Knox Bl.	91.25%	6.75%	2.00%	100.00%
2	Perris Bl.	s/o Harley Knox Bl.	91.26%	6.74%	2.00%	100.00%
3	Perris Bl.	n/o Ramona Expwy.	91.26%	6.74%	2.00%	100.00%
4	Perris Bl.	s/o Ramona Expwy.	91.46%	6.59%	1.96%	100.00%
5	Perris Bl.	s/o Morgan St.	91.34%	6.68%	1.98%	100.00%
6	Perris Bl.	s/o Rider St.	91.27%	6.73%	2.00%	100.00%
7	Redlands Av.	s/o Harley Knox Bl.	80.98%	7.91%	11.11%	100.00%
8	Redlands Av.	s/o Markham St.	81.85%	7.81%	10.33%	100.00%
9	Redlands Av.	s/o Ramona Expwy.	72.43%	8.19%	19.38%	100.00%
10	Redlands Av.	s/o Rider St.	91.35%	6.67%	1.98%	100.00%
11	Harley Knox Bl.	e/o Western Wy.	88.57%	7.07%	4.36%	100.00%
12	Harley Knox Bl.	e/o Patterson Av.	88.27%	7.11%	4.62%	100.00%
13	Harley Knox Bl.	e/o Webster Av.	88.09%	7.13%	4.79%	100.00%
14	Harley Knox Bl.	e/o Indian Av.	86.27%	7.33%	6.40%	100.00%
15	Harley Knox Bl.	e/o Perris Bl.	81.12%	7.89%	10.98%	100.00%
16	Markham St.	w/o Redlands Av.	91.21%	6.78%	2.01%	100.00%
17	Ramona Expwy.	w/o Nevada Av.	91.33%	6.69%	1.99%	100.00%
18	Ramona Expwy.	e/o Nevada Av.	91.34%	6.68%	1.98%	100.00%
19	Ramona Expwy.	e/o Webster Av.	91.35%	6.67%	1.98%	100.00%
20	Ramona Expwy.	e/o Indian Av.	91.35%	6.67%	1.98%	100.00%
21	Ramona Expwy.	e/o Perris Bl.	91.24%	6.76%	2.01%	100.00%
22	Ramona Expwy.	w/o Redlands Av.	91.24%	6.76%	2.01%	100.00%
23	Ramona Expwy.	e/o Redlands Av.	91.25%	6.75%	2.00%	100.00%
24	Morgan St.	e/o Perris Bl.	92.93%	5.45%	1.62%	100.00%
25	Rider St.	e/o Perris Bl.	91.60%	6.48%	1.92%	100.00%
26	Rider St.	w/o Redlands Av.	91.60%	6.47%	1.92%	100.00%
27	Rider St.	e/o Redlands Av.	91.47%	6.58%	1.95%	100.00%

[1] Source: Project Traffic Impact Analysis, Urban Crossroads, Inc.

[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-6: EXISTING PLUS AMBIENT PLUS CUMULATIVE WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Perris Bl.	n/o Harley Knox Bl.	91.25%	6.75%	2.00%	100.00%
2	Perris Bl.	s/o Harley Knox Bl.	91.26%	6.74%	2.00%	100.00%
3	Perris Bl.	n/o Ramona Expwy.	91.26%	6.74%	2.00%	100.00%
4	Perris Bl.	s/o Ramona Expwy.	91.42%	6.62%	1.96%	100.00%
5	Perris Bl.	s/o Morgan St.	91.32%	6.69%	1.99%	100.00%
6	Perris Bl.	s/o Rider St.	91.26%	6.74%	2.00%	100.00%
7	Redlands Av.	s/o Harley Knox Bl.	84.79%	7.49%	7.72%	100.00%
8	Redlands Av.	s/o Markham St.	85.16%	7.45%	7.39%	100.00%
9	Redlands Av.	s/o Ramona Expwy.	80.39%	7.59%	12.01%	100.00%
10	Redlands Av.	s/o Rider St.	91.34%	6.68%	1.98%	100.00%
11	Harley Knox Bl.	e/o Western Wy.	89.52%	6.97%	3.51%	100.00%
12	Harley Knox Bl.	e/o Patterson Av.	89.36%	6.98%	3.65%	100.00%
13	Harley Knox Bl.	e/o Webster Av.	89.06%	7.02%	3.92%	100.00%
14	Harley Knox Bl.	e/o Indian Av.	87.56%	7.18%	5.26%	100.00%
15	Harley Knox Bl.	e/o Perris Bl.	84.94%	7.47%	7.59%	100.00%
16	Markham St.	w/o Redlands Av.	91.21%	6.78%	2.01%	100.00%
17	Ramona Expwy.	w/o Nevada Av.	91.30%	6.71%	1.99%	100.00%
18	Ramona Expwy.	e/o Nevada Av.	91.31%	6.70%	1.99%	100.00%
19	Ramona Expwy.	e/o Webster Av.	91.32%	6.69%	1.99%	100.00%
20	Ramona Expwy.	e/o Indian Av.	91.32%	6.69%	1.99%	100.00%
21	Ramona Expwy.	e/o Perris Bl.	91.23%	6.76%	2.01%	100.00%
22	Ramona Expwy.	w/o Redlands Av.	91.23%	6.76%	2.01%	100.00%
23	Ramona Expwy.	e/o Redlands Av.	91.24%	6.75%	2.00%	100.00%
24	Morgan St.	e/o Perris Bl.	92.67%	5.65%	1.68%	100.00%
25	Rider St.	e/o Perris Bl.	91.51%	6.54%	1.94%	100.00%
26	Rider St.	w/o Redlands Av.	91.52%	6.54%	1.94%	100.00%
27	Rider St.	e/o Redlands Av.	91.44%	6.60%	1.96%	100.00%

[1] Source: Project Traffic Impact Analysis, Urban Crossroads, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

6.3 VIBRATION ASSESSMENT

This analysis focuses on the potential ground-borne vibration associated with vehicular traffic and construction activities. Ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity.

However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-7. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the human response (annoyance) using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation: $L_{VdB}(D) = L_{VdB}(25\text{ ft}) - 30\log(D/25)$

TABLE 6-7: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Vibration Decibels (VdB) at 25 feet
Small bulldozer	58
Jackhammer	79
Loaded Trucks	86
Large bulldozer	87
Pile Driver (Impact)	104
Pile Driver (Sonic)	93
Caisson Drill	87

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

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7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Traffic Impact Analysis*. (18) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

- Existing Without / With Project: This scenario refers to the existing present-day noise conditions, without and with the proposed Project. This condition is provided solely for analytical purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions.
- Existing plus Ambient plus Cumulative (EAC) With Project: This scenario refers to the exterior background noise conditions with the proposed Project plus ambient growth. This scenario corresponds to future conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic based on the PVCC SP EIR significance criteria discussed in Section 4. 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.

Tables 7-1 through 7-3 present a summary of the exterior traffic noise levels, without barrier attenuation, for the twenty-seven study area roadway segments analyzed for Existing, Existing with Project, and Existing plus Ambient plus Cumulative (EAC) with Project conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.

TABLE 7-1: EXISTING WITHOUT PROJECT NOISE CONTOURS

ID	Road	Segment	Adjacent Existing Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Perris Bl.	n/o Harley Knox Bl.	Commercial	76.7	180	388	835
2	Perris Bl.	s/o Harley Knox Bl.	Commercial	75.7	153	330	712
3	Perris Bl.	n/o Ramona Expwy.	Commercial	75.5	149	322	694
4	Perris Bl.	s/o Ramona Expwy.	Commercial	74.8	133	286	616
5	Perris Bl.	s/o Morgan St.	Light Industrial	75.0	139	298	643
6	Perris Bl.	s/o Rider St.	Light Industrial (Residential)	75.3	145	313	675
7	Redlands Av.	s/o Harley Knox Bl.	Light Industrial	68.5	RW	80	173
8	Redlands Av.	s/o Markham St.	Light Industrial	68.9	RW	86	185
9	Redlands Av.	s/o Ramona Expwy.	Commercial (Residential)	64.4	RW	RW	92
10	Redlands Av.	s/o Rider St.	Light Industrial (Residential)	67.5	RW	69	149
11	Harley Knox Bl.	e/o Western Wy.	Light Industrial	74.0	119	257	553
12	Harley Knox Bl.	e/o Patterson Av.	General Industrial	73.6	111	239	514
13	Harley Knox Bl.	e/o Webster Av.	General Industrial	73.3	106	229	493
14	Harley Knox Bl.	e/o Indian Av.	Light Industrial	72.2	90	194	418
15	Harley Knox Bl.	e/o Perris Bl.	Commercial (Non-Conforming Res.)	67.8	RW	99	214
16	Markham St.	w/o Redlands Av.	Light Industrial	58.8	RW	RW	RW
17	Ramona Expwy.	w/o Nevada Av.	Commercial	75.8	223	481	1035
18	Ramona Expwy.	e/o Nevada Av.	Commercial	75.5	212	458	986
19	Ramona Expwy.	e/o Webster Av.	Commercial/Light Industrial	75.0	199	428	922
20	Ramona Expwy.	e/o Indian Av.	Light Industrial	75.1	202	435	936
21	Ramona Expwy.	e/o Perris Bl.	Commercial (Residential)	74.6	188	404	871
22	Ramona Expwy.	w/o Redlands Av.	Commercial (Residential)	74.9	195	419	903
23	Ramona Expwy.	e/o Redlands Av.	Office	75.4	210	452	974
24	Morgan St.	e/o Perris Bl.	Light Industrial	62.8	RW	RW	73
25	Rider St.	e/o Perris Bl.	Light Industrial (Residential)	73.7	83	178	383
26	Rider St.	w/o Redlands Av.	Light Industrial (Residential)	73.7	83	178	384
27	Rider St.	e/o Redlands Av.	Light Industrial (Residential)	74.6	95	205	441

[1] Sources: Perris Valley Commerce Center Land Use Plan and Nearmap aerial imagery.

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-2: EXISTING WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Adjacent Existing Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Perris Bl.	n/o Harley Knox Bl.	Commercial	76.7	180	388	836
2	Perris Bl.	s/o Harley Knox Bl.	Commercial	75.7	154	331	713
3	Perris Bl.	n/o Ramona Expwy.	Commercial	75.5	150	323	695
4	Perris Bl.	s/o Ramona Expwy.	Commercial	74.8	134	288	620
5	Perris Bl.	s/o Morgan St.	Light Industrial	75.1	139	300	645
6	Perris Bl.	s/o Rider St.	Light Industrial (Residential)	75.4	146	314	676
7	Redlands Av.	s/o Harley Knox Bl.	Light Industrial	73.7	83	178	384
8	Redlands Av.	s/o Markham St.	Light Industrial	73.8	85	182	392
9	Redlands Av.	s/o Ramona Expwy.	Commercial (Residential)	72.8	73	156	337
10	Redlands Av.	s/o Rider St.	Light Industrial (Residential)	67.6	RW	70	150
11	Harley Knox Bl.	e/o Western Wy.	Light Industrial	75.8	156	337	726
12	Harley Knox Bl.	e/o Patterson Av.	General Industrial	75.5	149	321	692
13	Harley Knox Bl.	e/o Webster Av.	General Industrial	75.3	145	313	674
14	Harley Knox Bl.	e/o Indian Av.	Light Industrial	75.0	138	297	641
15	Harley Knox Bl.	e/o Perris Bl.	Commercial (Non-Conforming Res.)	72.8	98	211	454
16	Markham St.	w/o Redlands Av.	Light Industrial	58.8	RW	RW	RW
17	Ramona Expwy.	w/o Nevada Av.	Commercial	75.8	224	482	1039
18	Ramona Expwy.	e/o Nevada Av.	Commercial	75.5	213	459	990
19	Ramona Expwy.	e/o Webster Av.	Commercial/Light Industrial	75.0	200	430	926
20	Ramona Expwy.	e/o Indian Av.	Light Industrial	75.1	203	436	940
21	Ramona Expwy.	e/o Perris Bl.	Commercial (Residential)	74.7	188	405	872
22	Ramona Expwy.	w/o Redlands Av.	Commercial (Residential)	74.9	195	420	904
23	Ramona Expwy.	e/o Redlands Av.	Office	75.4	210	453	975
24	Morgan St.	e/o Perris Bl.	Light Industrial	63.2	RW	RW	76
25	Rider St.	e/o Perris Bl.	Light Industrial (Residential)	73.7	83	180	388
26	Rider St.	w/o Redlands Av.	Light Industrial (Residential)	73.8	84	180	388
27	Rider St.	e/o Redlands Av.	Light Industrial (Residential)	74.6	96	206	444

[1] Sources: Perris Valley Commerce Center Land Use Plan and Nearmap aerial imagery.

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-3: EXISTING PLUS AMBIENT PLUS CUMULATIVE WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Adjacent Existing Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Perris Bl.	n/o Harley Knox Bl.	Commercial	77.3	197	424	913
2	Perris Bl.	s/o Harley Knox Bl.	Commercial	76.2	166	357	769
3	Perris Bl.	n/o Ramona Expwy.	Commercial	76.1	163	351	757
4	Perris Bl.	s/o Ramona Expwy.	Commercial	75.7	153	329	708
5	Perris Bl.	s/o Morgan St.	Light Industrial	75.8	156	337	726
6	Perris Bl.	s/o Rider St.	Light Industrial (Residential)	76.0	160	344	742
7	Redlands Av.	s/o Harley Knox Bl.	Light Industrial	74.6	95	204	440
8	Redlands Av.	s/o Markham St.	Light Industrial	74.7	96	208	448
9	Redlands Av.	s/o Ramona Expwy.	Commercial (Residential)	73.6	82	176	379
10	Redlands Av.	s/o Rider St.	Light Industrial (Residential)	67.9	RW	73	158
11	Harley Knox Bl.	e/o Western Wy.	Light Industrial	77.3	198	426	917
12	Harley Knox Bl.	e/o Patterson Av.	General Industrial	77.1	189	407	878
13	Harley Knox Bl.	e/o Webster Av.	General Industrial	76.5	175	376	810
14	Harley Knox Bl.	e/o Indian Av.	Light Industrial	75.9	158	340	732
15	Harley Knox Bl.	e/o Perris Bl.	Commercial (Non-Conforming Res.)	73.7	113	244	525
16	Markham St.	w/o Redlands Av.	Light Industrial	59.0	RW	RW	RW
17	Ramona Expwy.	w/o Nevada Av.	Commercial	76.9	263	567	1222
18	Ramona Expwy.	e/o Nevada Av.	Commercial	76.6	253	545	1175
19	Ramona Expwy.	e/o Webster Av.	Commercial/Light Industrial	76.2	238	512	1104
20	Ramona Expwy.	e/o Indian Av.	Light Industrial	76.1	233	503	1083
21	Ramona Expwy.	e/o Perris Bl.	Commercial (Residential)	75.6	218	469	1011
22	Ramona Expwy.	w/o Redlands Av.	Commercial (Residential)	75.3	207	445	960
23	Ramona Expwy.	e/o Redlands Av.	Office	75.7	222	479	1031
24	Morgan St.	e/o Perris Bl.	Light Industrial	64.0	RW	RW	87
25	Rider St.	e/o Perris Bl.	Light Industrial (Residential)	74.9	100	216	464
26	Rider St.	w/o Redlands Av.	Light Industrial (Residential)	74.9	100	216	465
27	Rider St.	e/o Redlands Av.	Light Industrial (Residential)	75.4	107	231	498

[1] Sources: Perris Valley Commerce Center Land Use Plan and Nearmap aerial imagery.

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

7.2 EXISTING PROJECT-RELATED TRAFFIC NOISE LEVEL CONTRIBUTIONS AND IMPACTS

An analysis of existing off-site traffic noise levels has been included in this report based on the traffic volumes identified in the *IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Traffic Impact Analysis* prepared by Urban Crossroads, Inc. Consistent with other environmental reports prepared for the City of Perris, this analysis evaluates the off-site traffic noise impacts by comparing the Existing traffic volumes to the Existing with Project traffic volumes.

Table 7-1 presents the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 58.8 to 76.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows that the Existing with Project conditions will also range from 58.8 to 76.7 dBA CNEL. As shown on Table 7-4 the Project is expected to generate existing off-site traffic noise level increases ranging from 0.0 dBA CNEL to up to 8.4 dBA CNEL.

Based on the 5 dBA CNEL increase significance criteria when noise levels at noise-sensitive land uses are below 60 dBA CNEL or the 3 dBA CNEL increase criteria when the noise levels already exceed 60 dBA CNEL, one of the 27 study area roadway segments are shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project truck trip distribution under Existing with Project conditions. The existing noise-sensitive land use on this segment is described below.

- Non-conforming, existing noise-sensitive uses on Harley Knox Boulevard east of Perris Boulevard (Segment #15). A review of the Project study area indicates that three existing residences adjacent to this segment do not conform to the underlying industrial land use designation of the PVCC SP and City of Perris Zoning Map. Therefore, these residences are considered an existing non-conforming use. Even though these existing non-conforming residences likely will ultimately be developed with land uses that are consistent with the underlying industrial land use designation of the PVCC SP and City of Perris Zoning Map, for purposes of analysis they are considered sensitive noise receivers until such time they are unoccupied or no longer exist.

Section 7.4 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience noise level increases under Existing with Project conditions that would exceed the established thresholds of significance.

TABLE 7-4: EXISTING CONDITION WITH PROJECT TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?[2]	Incremental Noise Level Increase Threshold[3]	
			Existing Ambient	Existing +Project	Project Increase		Limit	Exceeded?
1	Perris Bl.	n/o Harley Knox Bl.	76.7	76.7	0.0	No	n/a	No
2	Perris Bl.	s/o Harley Knox Bl.	75.7	75.7	0.0	No	n/a	No
3	Perris Bl.	n/o Ramona Expwy.	75.5	75.5	0.0	No	n/a	No
4	Perris Bl.	s/o Ramona Expwy.	74.8	74.8	0.0	No	n/a	No
5	Perris Bl.	s/o Morgan St.	75.0	75.1	0.1	No	n/a	No
6	Perris Bl.	s/o Rider St.	75.3	75.4	0.1	Yes	3.0	No
7	Redlands Av.	s/o Harley Knox Bl.	68.5	73.7	5.2	No	n/a	No
8	Redlands Av.	s/o Markham St.	68.9	73.8	4.9	No	n/a	No
9	Redlands Av.	s/o Ramona Expwy.	64.4	72.8	8.4	No	n/a	No
10	Redlands Av.	s/o Rider St.	67.5	67.6	0.1	Yes	3.0	No
11	Harley Knox Bl.	e/o Western Wy.	74.0	75.8	1.8	No	n/a	No
12	Harley Knox Bl.	e/o Patterson Av.	73.6	75.5	1.9	No	n/a	No
13	Harley Knox Bl.	e/o Webster Av.	73.3	75.3	2.0	No	n/a	No
14	Harley Knox Bl.	e/o Indian Av.	72.2	75.0	2.8	No	n/a	No
15	Harley Knox Bl.	e/o Perris Bl.	67.8	72.8	5.0	Yes	3.0	Yes
16	Markham St.	w/o Redlands Av.	58.8	58.8	0.0	No	n/a	No
17	Ramona Expwy.	w/o Nevada Av.	75.8	75.8	0.0	No	n/a	No
18	Ramona Expwy.	e/o Nevada Av.	75.5	75.5	0.0	No	n/a	No
19	Ramona Expwy.	e/o Webster Av.	75.0	75.0	0.0	No	n/a	No
20	Ramona Expwy.	e/o Indian Av.	75.1	75.1	0.0	No	n/a	No
21	Ramona Expwy.	e/o Perris Bl.	74.6	74.7	0.1	Yes	3.0	No
22	Ramona Expwy.	w/o Redlands Av.	74.9	74.9	0.0	Yes	3.0	No
23	Ramona Expwy.	e/o Redlands Av.	75.4	75.4	0.0	No	n/a	No
24	Morgan St.	e/o Perris Bl.	62.8	63.2	0.4	No	n/a	No
25	Rider St.	e/o Perris Bl.	73.7	73.7	0.0	Yes	3.0	No
26	Rider St.	w/o Redlands Av.	73.7	73.8	0.1	Yes	3.0	No
27	Rider St.	e/o Redlands Av.	74.6	74.6	0.0	Yes	3.0	No

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the nearest adjacent land use.

[2] "Yes" = Existing, noise-sensitive land uses adjacent to the study area roadway segment.

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

7.3 EAC WITH PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS AND IMPACTS

Table 7-5 presents a comparison of the Existing and the Existing plus Ambient plus Cumulative (EAC) with Project CNEL noise levels. Table 7-5 presents a comparison of the cumulative off-site traffic impact based on the difference between the Existing and the EAC plus Project traffic volumes. This comparison is used by the City of Perris to describe the cumulative off-site traffic noise impacts. Table 7-5 shows that the cumulative off-site traffic noise impacts will range from 0.2 dBA CNEL to 9.2 dBA CNEL.

Based on the 5 dBA CNEL increase significance criteria when noise levels at noise-sensitive land uses are below 60 dBA CNEL or the 3 dBA CNEL increase criteria when the noise levels already exceed 60 dBA CNEL, one of the 27 study area roadway segments are shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project truck trip distribution under EAC with Project conditions. The noise-sensitive land uses on this segment is described below.

- Non-conforming, existing noise-sensitive uses on Harley Knox Boulevard east of Perris Boulevard (Segment #15). A review of the Project study area indicates that three existing residences adjacent to this segment do not conform to the underlying industrial land use designation of the PVCC SP and City of Perris Zoning Map. Therefore, these residences are considered an existing non-conforming use. Even though these existing non-conforming residences likely will ultimately be developed with land uses that are consistent with the underlying industrial land use designation of the PVCC SP and City of Perris Zoning Map, for purposes of analysis they are considered sensitive noise receivers until such time they are unoccupied or no longer exist.

Section 7.4 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience noise level increases under EAC with Project conditions that would exceed the established thresholds of significance.

7.4 OFF-SITE TRAFFIC NOISE MITIGATION

To reduce the *potentially significant* Project traffic noise level increases on the study area roadway segment (Segment #15) for Existing plus Project and EAC plus Project conditions, potential noise mitigation measures are identified in this analysis. Potential mitigation measures discussed below include rubberized asphalt hot mix pavement and off-site noise barriers for the existing non-conforming residential use adjacent to impacted roadway segments.

7.5.1 RUBBERIZED ASPHALT

Due to the potential noise attenuation benefits, rubberized asphalt is considered as a mitigation measure for the Project-related roadway improvements associated with Project construction. To reduce traffic noise levels at the noise source, Caltrans research has shown that rubberized asphalt can provide noise attenuation of approximately 4 dBA for automobile traffic noise levels. (19) Changing the pavement type of a roadway has been shown to reduce the amount of tire/pavement noise produced at the source under both near-term and long-term conditions. Traffic noise is generated primarily by the interaction of the tires and pavement, the engine, and exhaust systems. For automobiles noise, as much as 75 to 90-percent of traffic noise is generated

by the interaction of the tires and pavement, especially when traveling at higher and constant speeds. (14) According to research conducted by Caltrans (19) and the Canadian Ministry of Transportation and Highways (20) a 4 dBA reduction in tire/pavement noise is attainable using rubberized asphalt under typical operating conditions.

The effectiveness of reducing traffic noise levels is higher on roadways with low percentages of heavy trucks, since the heavy truck engine and exhaust noise is not affected by rubberized alternative pavement due to the truck engine and exhaust stack height above the pavement itself. (19) Per Caltrans guidance a truck stack height is modeled using a height of 11.5 feet above the road. (21) (22) With the primary off-site traffic noise source consisting of heavy trucks with a stack height of 11.5 feet off the ground, the tire/pavement noise reduction benefits associated rubberized asphalt will be primarily limited to autos.

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

7.5.2 OFF-SITE NOISE BARRIERS

Since existing and future noise-sensitive receiving land uses are located adjacent to the impacted roadway segments in the Project study area, off-site noise barriers were considered in this analysis as a potential traffic noise mitigation measure to reduce the impacts. Off-site noise barriers are estimated to provide a *readily perceptible* 5 dBA reduction which, according to the FHWA, is *simple* to attain when blocking the line-of-sight from the noise source to the receiver. (21) As previously discussed, Caltrans guidance in the Highway Design Manual, Section 1102.3(3), indicates that for design purposes, *the noise barrier should intercept the line of sight from the exhaust stack of a truck to the receptor*, and an 11.5-foot-high truck stack height is assumed to represent the truck engine and exhaust noise source. (22) Therefore, any exterior noise barriers at receiving noise sensitive land uses experiencing Project-related traffic noise level increases would need to be high enough and long enough to block the line-of-sight from the noise source (at 11.5 feet high per Caltrans) to the receiver (at 5 feet high per FHWA guidance) in order to provide a 5 dBA reduction per FHWA guidance. (22)

In addition, according to FHWA guidance, outdoor living areas are generally limited to outdoor living areas of frequent human use (e.g., backyards of single-family homes). Therefore, front and side yards of residential homes adjacent to off-site roadway segments do not represent noise sensitive areas of frequent human use that require exterior noise mitigation. (21) Exterior noise mitigation in the form of noise barriers is not anticipated to provide the FHWA attainable reduction of 5 dBA required to reduce the off-site traffic noise level increases and would also

require potential openings for driveway access to individual residential lots fronting the road. As such, off-site noise barriers would not be feasible and would not lower the off-site traffic noise levels below a level of significance, and therefore, noise barriers are not proposed as mitigation for the Project.

7.5.3 SIGNIFICANT OFF-SITE TRAFFIC NOISE IMPACTS

Both rubberized asphalt and off-site noise barriers are considered as potential noise mitigation measures to reduce the *potentially significant* off-site traffic noise level increases shown on Tables 7-4 to 7-5. However, neither form of mitigation would eliminate the off-site traffic noise level increases at the adjacent land uses to the impacted roadway segments. Therefore, the Project-related off-site traffic noise level increases at adjacent noise-sensitive land are considered a *significant and unavoidable* impact

TABLE 7-5: EAC WITH PROJECT TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?[2]	Incremental Noise Level Increase Threshold[3]	
			Existing Ambient	EAPC	Project Increase		Limit	Exceeded?
1	Perris Bl.	n/o Harley Knox Bl.	76.7	77.3	0.6	No	n/a	No
2	Perris Bl.	s/o Harley Knox Bl.	75.7	76.2	0.5	No	n/a	No
3	Perris Bl.	n/o Ramona Expwy.	75.5	76.1	0.6	No	n/a	No
4	Perris Bl.	s/o Ramona Expwy.	74.8	75.7	0.9	No	n/a	No
5	Perris Bl.	s/o Morgan St.	75.0	75.8	0.8	No	n/a	No
6	Perris Bl.	s/o Rider St.	75.3	76.0	0.7	Yes	3.0	No
7	Redlands Av.	s/o Harley Knox Bl.	68.5	74.6	6.1	No	n/a	No
8	Redlands Av.	s/o Markham St.	68.9	74.7	5.8	No	n/a	No
9	Redlands Av.	s/o Ramona Expwy.	64.4	73.6	9.2	No	n/a	No
10	Redlands Av.	s/o Rider St.	67.5	67.9	0.4	Yes	3.0	No
11	Harley Knox Bl.	e/o Western Wy.	74.0	77.3	3.3	No	n/a	No
12	Harley Knox Bl.	e/o Patterson Av.	73.6	77.1	3.5	No	n/a	No
13	Harley Knox Bl.	e/o Webster Av.	73.3	76.5	3.2	No	n/a	No
14	Harley Knox Bl.	e/o Indian Av.	72.2	75.9	3.7	No	n/a	No
15	Harley Knox Bl.	e/o Perris Bl.	67.8	73.7	5.9	Yes	3.0	Yes
16	Markham St.	w/o Redlands Av.	58.8	59.0	0.2	No	n/a	No
17	Ramona Expwy.	w/o Nevada Av.	75.8	76.9	1.1	No	n/a	No
18	Ramona Expwy.	e/o Nevada Av.	75.5	76.6	1.1	No	n/a	No
19	Ramona Expwy.	e/o Webster Av.	75.0	76.2	1.2	No	n/a	No
20	Ramona Expwy.	e/o Indian Av.	75.1	76.1	1.0	No	n/a	No
21	Ramona Expwy.	e/o Perris Bl.	74.6	75.6	1.0	Yes	3.0	No
22	Ramona Expwy.	w/o Redlands Av.	74.9	75.3	0.4	Yes	3.0	No
23	Ramona Expwy.	e/o Redlands Av.	75.4	75.7	0.3	No	n/a	No
24	Morgan St.	e/o Perris Bl.	62.8	64.0	1.2	No	n/a	No
25	Rider St.	e/o Perris Bl.	73.7	74.9	1.2	Yes	3.0	No
26	Rider St.	w/o Redlands Av.	73.7	74.9	1.2	Yes	3.0	No
27	Rider St.	e/o Redlands Av.	74.6	75.4	0.8	Yes	3.0	No

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the nearest adjacent land use.

[2] "Yes" = Existing, noise-sensitive land uses adjacent to the study area roadway segment.

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

8 RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction impacts, the following receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. As identified in the PVCC SP EIR, sensitive receivers are areas where humans are participating in activities that may be subject to the stress of significant interference from noise and often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. Other receivers include office and industrial buildings, which are not considered as sensitive as single-family homes, but are still protected by City of Perris land use compatibility standards, as discussed below.

Representative sensitive receivers in the Project study area include single-family residences and Morgan Park, as described below. In addition, other receivers include an existing RV park, which is a transient commercial use and is not considered a sensitive land use, and receiver locations BIO-1 and BIO-2, which represent existing open space uses and potential sensitive receiver locations for further consideration in the Bio report for the Project. Sensitive land uses in the Project study area that are located at greater distances than receivers 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 Camper Resorts of America RV park located approximately 1,345 feet north of the Project site, which is not a sensitive receiver. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.

R2: Location R2 represents the existing park, Morgan Park, located approximately 50 feet northeast of the Project site (east of the PVSD Channel Improvement Project). A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

R3: Location R3 represents the existing single-family residential property line at 3502 Churchill lane located approximately 944 feet east of the Project site (east of the PVSD Channel Improvement Project). A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.

R4: Location R4 represents the existing single-family residential property line at 805 Finnegan Way located approximately 382 feet east of the Project site (east of the PVSD Channel Improvement Project). A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.

R5: Location R5 represents existing single-family residential property line located at 812 Parula Street approximately 456 feet southeast of the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.

R6: Location R6 represents existing non-conforming residential property line within light industrial-designated land use located approximately 357 feet south of the Project site. A 24-hour noise measurement was taken near this location, L6, to describe the existing ambient noise environment.

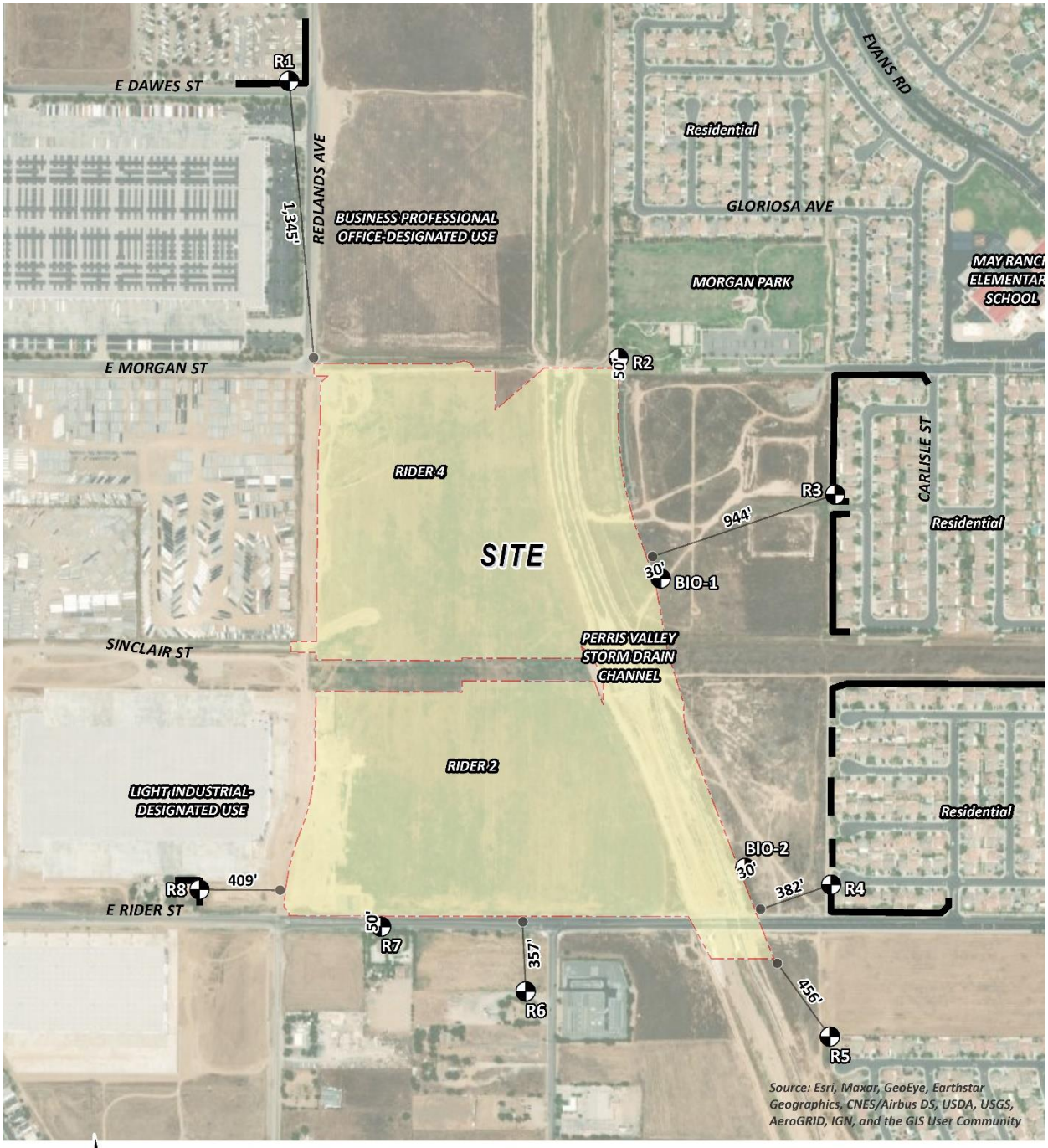
R7: Location R7 represents existing non-conforming residential property line within light industrial-designated land use located approximately 50 feet south of the Project site. A 24-hour noise measurement was taken near this location, L7, to describe the existing ambient noise environment.

R8: Location R8 represents existing non-conforming residential property line within light industrial-designated land use located approximately 409 feet west of the Project site. A 24-hour noise measurement was taken near this location, L8, to describe the existing ambient noise environment.

BIO-1: Location BIO-1 represents open space located approximately 30 feet east of the Project site (east of the PVSD Channel Improvement Project).

BIO-2: Location BIO-2 represents open space located approximately 30 feet east of the Project site (east of the PVSD Channel Improvement Project).

EXHIBIT 8-A: RECEIVER LOCATIONS



N

LEGEND:

Receiver Locations — Distance from receiver to Project site boundary (in feet)

Existing 6-Foot High Barrier

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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 IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project. Exhibit 9-A identifies the noise source locations used to assess the operational noise levels. The operational noise analysis includes the planned 14-foot-high screen wall on the perimeter of the truck trailer parking areas for each building. The screen wall locations shown on Exhibit 9-A are designed for screening, privacy, noise control, and security with berms on the street side.

9.1 OPERATIONAL NOISE SOURCES

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

9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. Table 9-1 presents both the average hourly L_{eq} and the maximum permissible L_{max} reference noise levels. The average hour L_{eq} noise levels are used to calculate the 24-hour noise levels necessary to demonstrate compliance with the City of Perris 60 dBA CNEL exterior noise level standard for new industrial facilities within 160 feet of the property line of existing noise-sensitive land uses.

In addition, the average hourly L_{eq} noise levels are used to describe the Project related operational noise level increases. The L_{max} reference noise levels shown on Table 9-1 are used to estimate the Project's maximum permissible exterior noise level consistent with the City's L_{max} noise level standards. It is important to note that the following projected noise levels assume the worst-case noise environment with the loading dock activity, roof-top air conditioning units, parking lot vehicle movements and trash enclosure activity all operating continuously. These sources of noise activity will likely vary throughout the day.

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

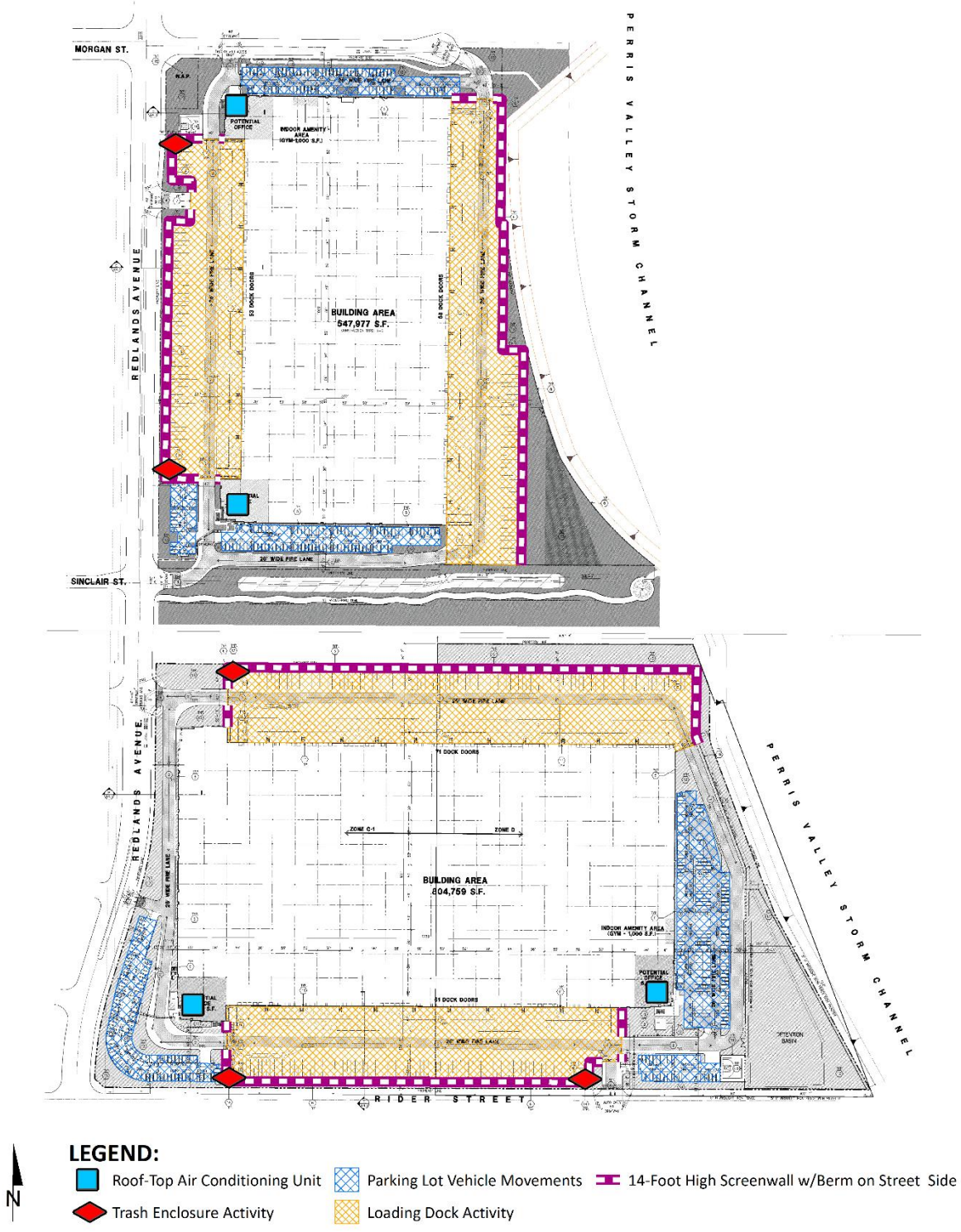


TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source	Ref. Distance (Feet)	Noise Source Height (Feet)	Min./Hour[5]		Reference Noise Level (dBA L_{eq})		Reference Noise Level (dBA L_{max})	
			Day	Night	@ Ref. Dist.	@ 50 Feet	@ Ref. Dist.	@ 50 Feet
Loading Dock Activity[1]	30'	8'	60	60	67.2	62.8	75.6	71.2
Roof-Top Air Conditioning Units[2]	5'	5'	39	28	77.2	57.2	77.7	57.7
Parking Lot Vehicle Movements[3]	10'	5'	60	60	52.2	41.7	61.0	50.5
Trash Enclosure Activity[4]	8'	5'	5	5	72.7	56.8	87.0	71.1

[1] As measured by Urban Crossroads, Inc. at the Motivational Fulfillment & Logistics Services distribution facility in the City of Chino.
[2] Lennox SCA120 series 10-ton model packaged air conditioning unit.
[3] As measured by Urban Crossroads, Inc. at the Panasonic Avionics Corporation parking lot in the City of Lake Forest.
[4] As measured by Urban Crossroads, Inc. at a commercial and office park trash enclosure in the City of Costa Mesa.
[5] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (13)

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical operational noise activities associated with the Project. This includes trucks maneuvering, truck loading, truck unloading, backup alarms or beepers, truck docking, a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background forklift operations. To describe the warehouse loading dock activities without cold storage, short-term reference noise level measurements were collected at the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino. The reference loading dock activity noise level measurement was taken over a fifteen-minute period and represents multiple noise sources taken from the center of activity generating a reference noise level of 71.2 dBA L_{max} at a uniform reference distance of 50 feet. At this measurement location, the noise sources associated with employees unloading a docked truck container included the squeaking of the truck's shocks when weight was removed from the truck, employees playing music over a radio, as well as a forklift horn and backup alarm or beeper.

9.2.3 ROOF-TOP AIR CONDITIONING UNITS

To assess the noise levels created by the roof-top air conditioning units, reference noise level measurements were collected from Lennox SCA120 series 10-ton model packaged air conditioning unit. At a uniform reference distance of 50 feet, the roof-top air conditioning units generate a reference noise level of 57.7 dBA L_{max}. Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for and average 39 minutes per hour during the daytime hours, and 28 minutes per hour during the nighttime hours. These operating conditions reflect summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings.

9.2.4 PARKING LOT VEHICLE MOVEMENTS (AUTOS)

To determine the noise levels associated with parking lot vehicle movements, Urban Crossroads collected reference noise level measurements over a 24-hour period at the parking lot for the Panasonic Avionics Corporation office and warehouse building in the City of Lake Forest. The peak hour of activity measured over the 24-hour noise level measurement period occurred between 12:00 p.m. to 1:00 p.m., or the typical lunch hour for employees working in the area. The measured reference noise level at 50 feet from parking lot vehicle movements was measured at 50.5 dBA L_{max}. The parking lot noise levels are mainly due to cars pulling in and out of spaces during peak lunch hour activity and employees talking, and represents peak activity observed over a 24-hour period. Noise associated with parking lot vehicle movements is expected to operate for the entire hour.

9.2.5 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure activity, Urban Crossroads collected a reference noise level measurement at an existing trash enclosure containing two dumpster bins. The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, trash dropping into the metal dumpster. The reference noise levels describe trash enclosure noise activities when trash is dropped into an empty metal dumpster, as would occur at the Project site. The measured reference noise level at the uniform 50-foot reference distance is 71.1 dBA L_{max} for the trash enclosure activity. The reference noise level describes the expected noise source activities associated with the trash enclosures for each of the Project buildings. Typical trash enclosure activities are estimated to occur for 5 minutes per hour.

9.3 CADNAA NOISE PREDICTION MODEL

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

Using the ISO 9613 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a noise level summary at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613 protocol, the CadnaA noise prediction model relies on the reference sound power level (PWL) to describe individual noise sources. While sound pressure levels (e.g. L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (PWL) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish 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 noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs including the planned 14-foot high screen wall used to estimate the Project operational noise levels presented in this section.

9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning units, parking lot vehicle movements and trash enclosure activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the receiver locations. Tables 9-2 shows the Project operational noise levels during the daytime hours of 7:01 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 44.5 to 59.9 dBA L_{max}.

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA L_{max})									
	R1	R2	R3	R4	R5	R6	R7	R8	BIO-1	BIO-2
Loading Dock Activity	44.5	53.7	47.6	52.9	49.4	55.6	59.9	44.4	57.9	55.3
Roof-Top Air Conditioning Units	19.6	22.8	19.7	23.6	22.1	28.1	32.2	21.4	23.5	26.1
Parking Lot Vehicle Movements	22.2	31.5	22.3	32.3	30.8	37.4	38.3	26.5	30.7	36.0
Trash Enclosure Activity	12.8	13.1	8.7	21.1	17.1	23.6	32.9	15.4	15.2	24.6
Total (All Noise Sources)	**44.5**	**53.7**	**47.6**	**52.9**	**49.5**	**55.7**	**59.9**	**44.5**	**57.9**	**55.4**

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

Table 9-3 shows the Project operational noise levels during the nighttime hours of 10:01 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 44.5 to 59.9 dBA L_{max}. The minor differences between the daytime and nighttime noise levels is largely related to the duration of noise activity by the individual noise source

activity (Table 9-1). While the individual noise source levels vary between the daytime and nighttime operational noise levels, the loading dock activity noise source levels effectively overshadows the other noise source activity. This effectively produces the same daytime and nighttime noise levels.

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA L_{max})									
	R1	R2	R3	R4	R5	R6	R7	R8	BIO-1	BIO-2
Loading Dock Activity	44.5	53.7	47.6	52.9	49.4	55.6	59.9	44.4	57.9	55.3
Roof-Top Air Conditioning Units	17.2	20.3	17.2	21.2	19.7	25.7	29.8	19.0	21.1	23.7
Parking Lot Vehicle Movements	22.2	31.5	22.3	32.3	30.8	37.4	38.3	26.5	30.7	36.0
Trash Enclosure Activity	11.9	12.1	7.8	20.1	16.2	22.6	31.9	14.5	14.3	23.6
Total (All Noise Sources)	**44.5**	**53.7**	**47.6**	**52.9**	**49.5**	**55.7**	**59.9**	**44.5**	**57.9**	**55.4**

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

9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Perris L_{max} exterior noise level standards at the nearest noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project will satisfy the City of Perris operational noise level standards at all the nearest receiver locations. Therefore, the operational noise impacts are considered *less than significant*.

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Project Operational Noise Levels (dBA L_{max})[2]		Exterior Noise Level Standards (dBA L_{max})[3]		Noise Level Standards Exceeded?[4]	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	44.5	44.5	80	60	No	No
R2	53.7	53.7	80	60	No	No
R3	47.6	47.6	80	60	No	No
R4	52.9	52.9	80	60	No	No
R5	49.5	49.5	80	60	No	No
R6	55.7	55.7	80	60	No	No
R7	59.9	59.9	80	60	No	No
R8	44.5	44.5	80	60	No	No
BIO-1	57.9	57.9	-[5]	-[5]	-[5]	-[5]
BIO-2	55.4	55.4	-[5]	-[5]	-[5]	-[5]

[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 standard as shown on Table 3-1.
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
[5] Receiver location and Project operational noise levels provided for informational purposes. Potential impacts analyzed in the Bio report for the Project.
"Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.

Consistent with the City of Perris General Plan Noise Element, Implementation Measure V.A.1, Project operational noise levels at nearest sensitive receiver locations cannot exceed 60 dBA CNEL. The CNEL metric is typically used to describe 24-hour transportation-related noise levels, however, the City of Perris General Plan Noise Element requires new industrial land use such as the Project to demonstrate compliance at any noise-sensitive land use within 160 feet of the Project site. Table 9-5 includes the evening and nighttime adjustments made to the operational noise levels during the applicable hours to convert the worst-case hourly operational noise levels (L_{eq}) to 24-hour CNELs.

Table 9-5 indicates that the 24-hour noise levels associated with the IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project at the nearest receiver locations are expected to range from 42.8 to 58.3 dBA CNEL. The Project-related operational noise levels shown on Table 9-5 will satisfy the City of Perris 60 dBA CNEL exterior noise level standards at the nearest sensitive receiver locations.

TABLE 9-5: OPERATIONAL NOISE LEVEL COMPLIANCE (CNEL)

Receiver Location[1]	Project Operational Noise Levels			Exterior Noise Level Standards (CNEL)[3]	Noise Level Standards Exceeded?[4]
	Daytime (dBA L_{eq})	Nighttime (dBA L_{eq})	24-Hour (CNEL)		
R1	36.2	36.2	42.8	60	No
R2	45.4	45.4	52.1	60	No
R3	39.2	39.2	45.9	60	No
R4	44.6	44.6	51.3	60	No
R5	41.1	41.1	47.8	60	No
R6	47.3	47.3	54.0	60	No
R7	51.6	51.6	58.3	60	No
R8	36.1	36.1	42.8	60	No
BIO-1	49.5	49.5	56.2	-[5]	-[5]
BIO-2	47.0	47.0	53.7	-[5]	-[5]

[1] See Exhibit 8-A for the receiver locations.
[2] Proposed Project operational noise level calculations are included in Appendix 9.1.
[3] City of Perris General Plan Noise Element Implementation Measure V.A.1
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
[5] Receiver location and Project operational noise levels provided for informational purposes. Potential impacts analyzed in the Bio report for the Project.
"Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.

9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

To describe the Project operational noise level increases, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearest receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (14) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the ambient daytime and nighttime conditions are presented on Tables 9-6 and 9-7.

As indicated on Tables 9-6 and 9-7, the Project will contribute a daytime operational noise level increase of up to 0.6 dBA L_{eq} and a nighttime operational noise level increase of up to 3.3 dBA L_{eq} at the sensitive receiver locations. Since the Project-related operational noise level contributions would not exceed the significance criteria of 5 dBA when the without Project noise levels are below 60 dBA CNEL or 3 dBA when the without Project noise levels exceed 60 dBA CNEL, the increases at the sensitive receiver locations are considered *less than significant*.

TABLE 9-6: PROJECT DAYTIME NOISE LEVEL CONTRIBUTIONS (DBA LEQ)

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	36.2	L1	62.9	62.9	0.0	3.0	No
R2	45.4	L2	53.9	54.5	0.6	5.0	No
R3	39.2	L3	56.1	56.2	0.1	5.0	No
R4	44.6	L4	55.9	56.2	0.3	5.0	No
R5	41.1	L5	55.6	55.8	0.2	5.0	No
R6	47.3	L6	63.7	63.8	0.1	3.0	No
R7	51.6	L7	67.7	67.8	0.1	3.0	No
R8	36.1	L8	67.6	67.6	0.0	3.0	No

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

TABLE 9-7: PROJECT NIGHTTIME NOISE LEVEL CONTRIBUTIONS (DBA LEQ)

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	36.2	L1	59.2	59.2	0.0	5.0	No
R2	45.4	L2	44.9	48.2	3.3	5.0	No
R3	39.2	L3	55.3	55.4	0.1	5.0	No
R4	44.6	L4	48.6	50.1	1.5	5.0	No
R5	41.1	L5	48.0	48.8	0.8	5.0	No
R6	47.3	L6	59.0	59.3	0.3	5.0	No
R7	49.5	L7	63.4	63.6	0.2	3.0	No
R8	47.0	L8	63.7	63.8	0.1	3.0	No

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

9.5 OPERATIONAL VIBRATION IMPACTS

To assess the potential vibration impacts from truck haul trips associated with operational activities the FTA *Transit Noise and Vibration Impact Assessment Manual* maximum-acceptable vibration criteria of 78 VdB for daytime residential uses in buildings where people normally sleep is used. However, trucks rarely create vibration that exceeds 70 VdB (unless there are bumps due to frequent potholes in the road). (4 p. 113) Trucks transiting on site will be travelling at very low speeds so it is expected that truck vibration impacts at the nearest homes will satisfy the maximum-acceptable vibration criteria of 78 VdB for daytime and 72 VdB for nighttime for residential uses, and therefore, will be *less than significant*.

10 CONSTRUCTION IMPACTS

Construction-related noise impacts are expected to create short-term and intermittent high-level noise conditions at the nearest noise sensitive receivers surrounding the Project site. Using sample reference noise levels to represent the planned construction activities of IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project site, this section analyzes the potential impacts resulting from the construction of the Rider 2 and 4 Warehouse as shown on Exhibit 10-A and the PVSD Channel Improvements as shown on Exhibit 10-B.

10.1 CONSTRUCTION NOISE LEVELS

Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators that when operating at the project site boundaries closest the nearest receiver locations can reach high levels. The number and mix of construction equipment are expected to occur in the stages outlined below based on the *IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (3)

10.1.1 RIDER 2 AND 4 WAREHOUSE CONSTRUCTION

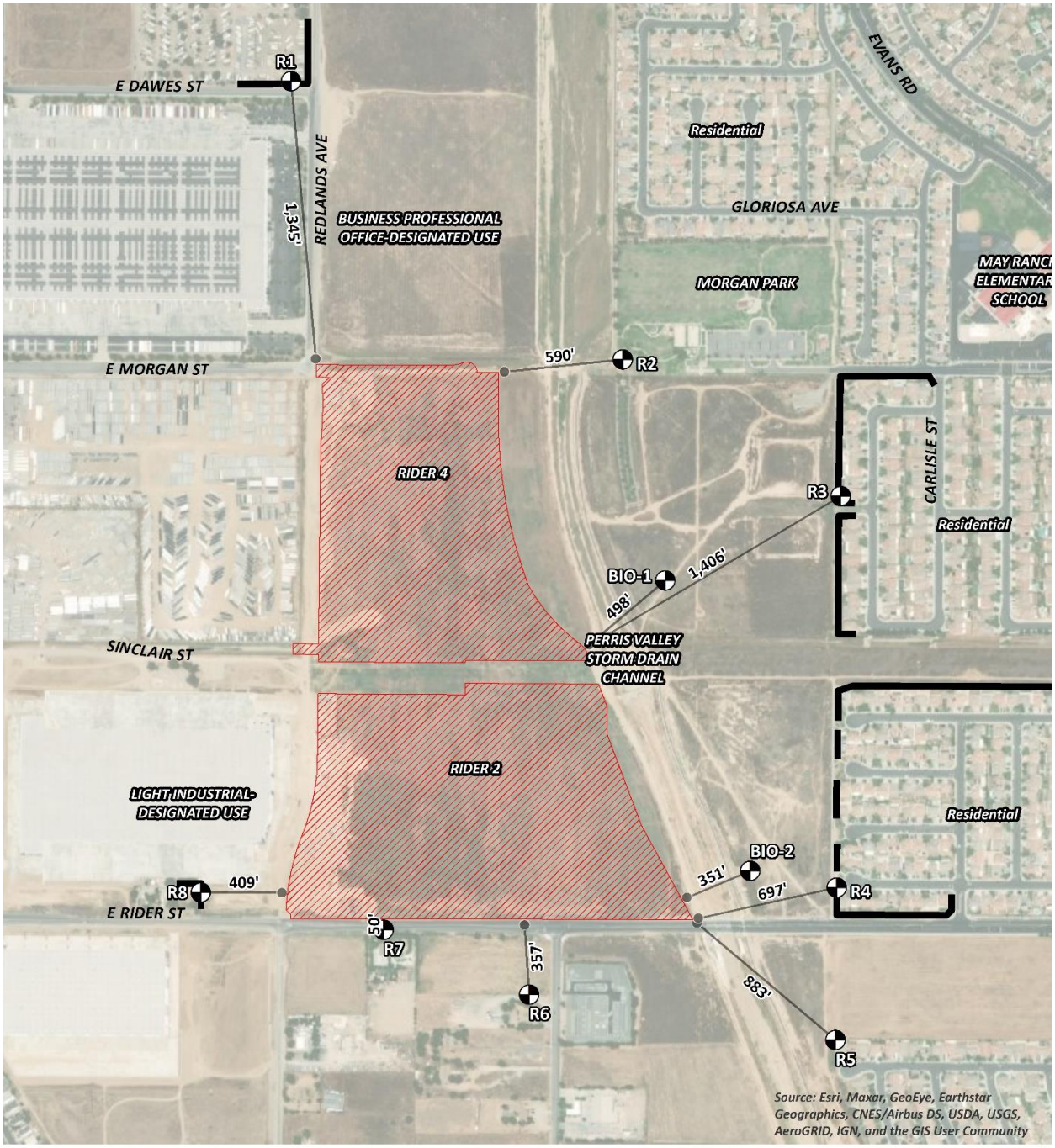
Project construction will consist of two Warehouse buildings totaling approximately 1,352,736 square feet (sf) (Rider 2 is to consist of approximately 804,759 sf and Rider 4 is to consist of approximately 547,977) sf of Warehouse use (without cold storage) in the following stages:

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

10.1.2 PVSD CHANNEL IMPROVEMENTS

The proposed improvements to the PVSD Channel entail Phase 1 of a larger channel improvement project to accommodate 100-year storm flows, which would ultimately extend north to just past Ramona Expressway and south of Rider Street. The PVSD Channel would be earthen except in the vicinity of the engineered drop structure and Rider Street bridge, where it would have concrete side slopes. Erosion protection features would be installed, and existing storm drain inlets that tie into the PVSD Channel would be reconstructed as part of the Project. The proposed widening of the PVSD Channel would also require replacing the existing bridge with a longer bridge over the Channel.

EXHIBIT 10-A: RIDER 2 AND 4 WAREHOUSE CONSTRUCTION ACTIVITIES



LEGEND:

N

Receiver Locations

Rider 2 and 4 Construction

Existing 6-Foot High Barrier

Distance from receiver to construction activity (in feet)

EXHIBIT 10-B: PVSD CHANNEL IMPROVEMENTS CONSTRUCTION ACTIVITIES

LEGEND:

N

Receiver Locations

PVSD Channel Improvements

Existing 6-Foot High Barrier

Distance from receiver to construction activity (in feet)

The bridge would consist of pre-cast (i.e., prefabricated in a shop plant and assembled at the job site) pre-stressed (PC/PS) voided concrete slab. No pile driving is expected as part of the Project construction activities. However, the PVSD Channel bridge construction may consist of one or two stages. With one stage of construction the entire bridge will be replaced thereby eliminating through traffic. Two stages of construction will take longer and permit through traffic during construction. The staging of bridge construction shown below only changes the duration of the potential noise level impacts and does not affect the Project construction noise levels at the nearest receiver locations.

- PVSD Channel Excavation
- Rider Bridge Construction
    - Grubbing/Land Clearing
    - Grading/Excavation/Removing Existing Bridge
    - Bridge Construction
    - Drainage/Utilities/Sub-Grade
    - Paving

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

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. (24) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment including reference L_{max} noise levels measured at 50 feet.

Noise levels generated by heavy construction equipment can range from approximately 68 dBA to more than 85 dBA L_{max} when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 85 dBA L_{max} measured at 50 feet from the noise source to the receiver would be reduced to 79 dBA L_{max} at 100 feet from the source to the receiver, and would be further reduced to 73 dBA L_{max} at 200 feet from the source to the receiver.

Table 10-1 provides a summary of the construction reference noise levels expected with the Rider 2 and 4 warehouse construction activities. Table 10-2 presents a summary of the PVSD Channel Improvement construction reference noise levels.

TABLE 10-1: RIDER 2 AND 4 WAREHOUSE CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Construction Activity	Reference Noise Level @ 50 Feet (dBA L_{max})[1]	Highest Reference Noise Level (dBA L_{max})
Site Preparation	Crawler Tractors	82	82
	Rubber Tired Dozers	79	
Grading	Crawler Tractors	82	85
	Excavators	81	
	Graders	85	
	Rubber Tired Dozers	79	
	Graders	85	
Building Construction	Cranes	81	82
	Crawler Tractors	82	
	Rubber Tired Dozers	79	
	Generator Sets	73	
	Welders	74	
Paving	Pavers	77	80
	Hauling Trucks	76	
	Rollers	80	
Arch. Coating	Air Compressors	78	78

[1] FHWA's Roadway Construction Noise Model, January 2006.

TABLE 10-2: PVSD CHANNEL IMPROVEMENTS CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Construction Activity	Reference Noise Level @ 50 Feet (dBA L_{max})[1]	Highest Reference Noise Level (dBA L_{max})
Excavation	Graders	85	85
Grubbing/ Land Clearing	Crawler Tractors	82	82
	Excavators	81	
	Hauling Trucks	76	
Grading/ Excavation	Crawler Tractors	82	84
	Scrapers	84	
	Backhoes	78	
	Hauling Trucks	76	
Bridge Construction	Drilling Rig	79	85
	Cranes	81	
	Excavators	81	
	Compactors	83	
	Graders	85	
Drainage/ Utilities	Crawler Tractors	82	82
	Backhoes	78	
Paving	Pavers	77	80
	Hauling Trucks	76	
	Rollers	80	

[1] FHWA's Roadway Construction Noise Model, January 2006.

10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference RCNM L_{max} construction equipment noise levels, calculations of the Project construction noise levels at the nearest receiver locations were completed. Tables 10-3 and 10-4 provide a summary of the noise levels by construction stage at the nearest receiver locations. The noise analysis shows that the Project construction activities are expected to range from 52.6 to 85.0 dBA L_{max} at the nearest receiver locations. Appendix 10.1 includes the detailed noise model inputs used to estimate the Project construction noise levels presented in this section.

TABLE 10-3: RIDER 2 AND 4 WAREHOUSE CONSTRUCTION NOISE LEVEL SUMMARY

Receiver Location[1]	Distance to Receiver (Feet)	Construction Noise Levels (dBA L_{max})					
		Site Preparation	Grading	Building Construction	Paving	Arch. Coating	Highest Levels[2]
R1	1,345'	53.4	56.4	53.4	51.4	49.4	56.4
R2	590'	60.6	63.6	60.6	58.6	56.6	63.6
R3	1,406'	53.0	56.0	53.0	51.0	49.0	56.0
R4	697'	59.1	62.1	59.1	57.1	55.1	62.1
R5	883'	57.1	60.1	57.1	55.1	53.1	60.1
R6	357'	64.9	67.9	64.9	62.9	60.9	67.9
R7	50'	82.0	85.0	82.0	80.0	78.0	85.0
R8	409'	63.7	66.7	63.7	61.7	59.7	66.7
BIO-1	498'	62.0	65.0	62.0	60.0	58.0	65.0
BIO-2	351'	65.1	68.1	65.1	63.1	61.1	68.1

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to the nearest receiver locations.

TABLE 10-4: PVSD CHANNEL IMPROVEMENTS CONSTRUCTION NOISE LEVEL SUMMARY

Receiver Location[1]	Distance to Receiver (Feet)	Construction Noise Levels (dBA L_{max})						
		Excavation	Grubbing/ Land Clearing	Grading/ Excavation	Bridge Construction	Drainage/ Utilities	Paving	Highest Levels[2]
R1	1,843'	53.7	50.7	52.7	53.7	50.7	48.7	53.7
R2	50'	85.0	82.0	84.0	85.0	82.0	80.0	85.0
R3	944'	59.5	56.5	58.5	59.5	56.5	54.5	59.5
R4	382'	67.3	64.3	66.3	67.3	64.3	62.3	67.3
R5	456'	65.8	62.8	64.8	65.8	62.8	60.8	65.8
R6	894'	60.0	57.0	59.0	60.0	57.0	55.0	60.0
R7	1,368'	56.3	53.3	55.3	56.3	53.3	51.3	56.3
R8	2,090'	52.6	49.6	51.6	52.6	49.6	47.6	52.6
BIO-1	30'	89.4	86.4	88.4	89.4	86.4	84.4	89.4
BIO-2	30'	89.4	86.4	88.4	89.4	86.4	84.4	89.4

[1] Noise receiver locations are shown on Exhibit 10-B.
[2] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to the nearest receiver locations.

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

The construction noise analysis shows that the highest construction noise levels will occur when equipment is operating at the closest point from the edge of the Project construction boundary to each of the nearest receiver locations. As shown on Table 10-5, the highest unmitigated construction noise levels are expected to range from 52.6 to 85.0 dBA L_{max}.

TABLE 10-5: CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Highest Construction Noise Levels (dBA L_{max})			
	Rider 2 and 4 Warehouse	PVSD Channel Improvements	Threshold[3]	Threshold Exceeded?[4]
R1	56.4	53.7	80	No
R2	63.6	85.0	80	Yes
R3	56.0	59.5	80	No
R4	62.1	67.3	80	No
R5	60.1	65.8	80	No
R6	67.9	60.0	80	No
R7	85.0	56.3	80	Yes
R8	66.7	52.6	80	No
BIO-1	65.0	89.4	-[5]	-[5]
BIO-2	68.1	89.4	-[5]	-[5]

[1] Noise receiver locations are shown on Exhibits 10-A and 10-B.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 10-3 and 10-4.
[3] Construction noise level thresholds as shown on Table 4-1.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?
[5] Receiver location and Project construction noise levels provided for informational purposes. Potential impacts analyzed in the Bio report for the Project.

The construction noise analysis shows that receiver locations R2 and R7 will exceed the City of Perris Municipal Code 80 dBA L_{max} significance threshold for construction activity. Therefore, the unmitigated noise impact due to Project construction activities is considered *potentially significant*. All other receiver locations will experience *less than significant* construction noise levels.

Located 50 feet northeast of the PVSD Channel Improvement area, receiver location R2 is used to describe Morgan Park. Receiver location R7 describes the residential property line at 475 E Rider Street located 50 feet south of the Rider 2 construction boundary. While the analysis shows that receiver locations R2 and R7 will exceed the City of Perris 80 dBA L_{max} construction significance threshold, neither R2 or R7 represent private outdoor living areas or areas of frequent human use. However, since receiver locations R2 and R7 will experience *potentially significant* construction noise level impacts, the following temporary construction noise mitigation measure is required:

- Provide a minimum 100-foot buffer zone separating large construction equipment (e.g. dozers, graders, scrapers, etc.) from receiver locations R2 and R7.

Using the drop-off rate of 6 dBA per doubling of distance, the highest construction equipment reference noise level noise levels associated with large construction equipment of 85 dBA L_{max} at 50 feet would be reduced to 79 dBA L_{max} at 100 feet. With the required minimum 100-foot buffer zone separating large construction equipment (e.g. dozers, graders, scrapers, etc.) from receiver locations R2 and R7, the Project construction noise levels will satisfy the City of Perris 80 dBA L_{max} construction noise level threshold. Therefore, the Project construction noise levels are considered *less than significant* with mitigation.

10.5 TYPICAL CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. The proposed Project's construction activities most likely to cause vibration impacts are:

- Heavy Construction Equipment: Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to buildings, the vibration is usually short-term and is not of sufficient magnitude to cause building damage.
- Trucks: Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration. Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include grading. Using the vibration source level of construction equipment provided on Table 6-7 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Tables 10-6 and 10-7 presents the expected Project related vibration levels at the nearest receiver locations.

Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference level of 87 VdB at 25 feet. Construction vibration levels are expected to range from 29.3 to 78.0 VdB at residential receiver locations. Using the construction vibration assessment methods provided by the FTA, Project construction vibration levels would not exceed the FTA 78 VdB threshold at all sensitive residential receiver locations, and therefore, is considered a *less than significant* impact. Further, vibration levels at the site of the closest sensitive receiver are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating at the Project site perimeter.

TABLE 10-6: RIDER 2 AND 4 WAREHOUSE CONSTRUCTION VIBRATION LEVELS

Receiver Location[1]	Distance to Construction Activity (Feet)	Receiver Vibration Levels (VdB)[2]					Threshold VdB[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Highest Vibration Levels		
R1	1,345'	6.1	27.1	34.1	35.1	35.1	78	No
R2	590'	16.8	37.8	44.8	45.8	45.8	78	No
R3	1,406'	5.5	26.5	33.5	34.5	34.5	78	No
R4	697'	14.6	35.6	42.6	43.6	43.6	78	No
R5	883'	11.6	32.6	39.6	40.6	40.6	78	No
R6	357'	23.4	44.4	51.4	52.4	52.4	78	No
R7	50'	49.0	70.0	77.0	78.0	78.0	78	No
R8	409'	21.6	42.6	49.6	50.6	50.6	78	No
BIO-1	498'	19.0	40.0	47.0	48.0	48.0	-[5]	-[5]
BIO-2	351'	23.6	44.6	51.6	52.6	52.6	-[5]	-[5]

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 6-7.
[3] FTA Transit Noise and Vibration Impact Assessment maximum acceptable vibration criteria as shown on Table 4-2.
[4] Does the vibration level exceed the maximum acceptable vibration threshold?
[5] Receiver location and Project construction noise levels provided for informational purposes. Potential impacts analyzed in the Bio report for the Project.

TABLE 10-7: PVSD CHANNEL IMPROVEMENTS CONSTRUCTION VIBRATION LEVELS

Receiver Location[1]	Distance to Construction Activity (Feet)	Receiver Vibration Levels (VdB)[2]					Threshold VdB[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Highest Vibration Levels		
R1	1,843'	2.0	23.0	30.0	31.0	31.0	78	No
R2	50'	49.0	70.0	77.0	78.0	78.0	78	No
R3	944'	10.7	31.7	38.7	39.7	39.7	78	No
R4	382'	22.5	43.5	50.5	51.5	51.5	78	No
R5	456'	20.2	41.2	48.2	49.2	49.2	78	No
R6	894'	11.4	32.4	39.4	40.4	40.4	78	No
R7	1,368'	5.9	26.9	33.9	34.9	34.9	78	No
R8	2,090'	0.3	21.3	28.3	29.3	29.3	78	No
BIO-1	30'	55.6	76.6	83.6	84.6	84.6	-[5]	-[5]
BIO-2	30'	55.6	76.6	83.6	84.6	84.6	-[5]	-[5]

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 6-7.
[3] FTA Transit Noise and Vibration Impact Assessment maximum acceptable vibration criteria as shown on Table 4-2.
[4] Does the vibration level exceed the maximum acceptable vibration threshold?
[5] Receiver location and Project construction noise levels provided for informational purposes. Potential impacts analyzed in the Bio report for the Project.

11 REFERENCES

1. **City of Perris.** *Perris Valley Commerce Center Specific Plan Environmental Impact Report.* July 2011.
2. **State of California.** *California Environmental Quality Act, Appendix G.* 2019.
3. **Urban Crossroads, Inc.** *IDI Rider 2 and 4 High Cube Warehouse and Perris Valley Storm Drain Channel Improvement Project Air Quality Impact Analysis.* July 2020.
4. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment.* September 2018.
5. **City of Perris.** *Zoning Map.* October 2016.
6. **Office of Planning and Research.** *State of California General Plan Guidelines.* 2019.
7. **State of California.** *California Green Building Standards Code.* 2019.
8. **City of Perris.** *General Plan Noise Element.* August 2005.
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21. **California Department of Transportation.** *Highway Design Manual, Chapter 1100 Highway Traffic Noise Abatement.* November 2017.
22. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning.** *FHWA Roadway Construction Noise Model.* January, 2006.

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12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5979.

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EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 3.1:

CITY OF PERRIS MUNICIPAL CODE

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CHAPTER 7.34. - NOISE CONTROL

Sec. 7.34.010. - Declaration of policy.

Excessive noise levels are detrimental to the health and safety of individuals. Noise is considered a public nuisance, and the city discourages unnecessary, excessive or annoying noises from all sources. Creating, maintaining, causing, or allowing to be created, caused or maintained, any noise or vibration in a manner prohibited by the provisions of the ordinance codified in this chapter is a public nuisance and shall be punishable as a misdemeanor.

(Code 1972, § 7.34.010; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.020. - Definitions.

(a) *General.* The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Ambient noise means the all-encompassing noise associated with a given environment usually being composed 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 five 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.

Decibel (dB) means an intensity unit which denotes the ratio between two quantities which are proportional to power; the number of decibels corresponding to the ratio is ten times the common logarithm of this ratio.

Sound amplifying equipment means any machine or device for the amplification of the human voice, music or any other sound. The term "sound amplifying equipment" does not include standard vehicle radios when used and heard only by the occupants of the vehicle in which the vehicle radio is installed. The term "sound amplifying equipment," as used in this chapter, does not include warning devices on any vehicle used only for traffic safety purposes and shall not include communications equipment used by public or private utilities when restoring utility service following a public emergency or when doing work required to protect person or property from an imminent exposure to danger.

Sound level (noise level) in decibels is the value of a sound measurement using the "A" weighting network of a sound level meter. Slow response of the sound level meter needle shall be used except where the sound is impulsive or rapidly varying in nature, in which case, fast response shall be used.

Sound level meter means an instrument, including a microphone, an amplifier, an output meter and frequency weighting networks, for the measurement of sound levels, which satisfies the pertinent requirements in American National Standards Institute's specification S1.4-1971 or the most recent revision for type S-2A general purpose sound level meters.

(b) *Supplementary definitions of technical terms.* Definitions of technical terms not defined in this section shall be obtained from the American National Standards Institute's Acoustical Terminology S1-1971 or the most recent revision thereof.

(Code 1972, § 7.34.020; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.030. - Measurement methods.

(a) Sound shall be measured with a sound level meter as defined in section 7.34.020.

(b) Unless otherwise provided, outdoor measurements shall be taken with the microphone located at any point

on the property line of the noise source but no closer than five feet from any wall or vertical obstruction and three to five feet above ground level whenever possible.

(c) Unless otherwise provided, indoor measurements shall be taken inside the structure with the microphone located at any point as follows:

(1) No less than three feet above floor level;

(2) No less than five feet from any wall or vertical obstruction; and

(3) Not under common possession and control with the building or portion of the building from which the sound is emanating.

(Code 1972, § 7.34.030; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.040. - Sound amplification.

No person shall amplify sound using sound amplifying equipment contrary to any of the following:

(1) The only amplified sound permitted shall be either music or the human voice, or both.

(2) The volume of amplified sound shall not exceed the noise levels set forth in this subsection when measured outdoors at or beyond the property line of the property from which the sound emanates.

Time Period	Maximum Noise Level
10:01 p.m.—7:00 a.m.	60 dBA
7:01 a.m.—10:00 p.m.	80 dBA

(Code 1972, § 7.34.040; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.050. - General prohibition.

(a) It unlawful for any person to willfully make, cause or suffer, or permit to be made or caused, any loud excessive or offensive noises or sounds which unreasonably disturb the peace and quiet of any residential neighborhood or which are physically annoying to persons of ordinary sensitivity or which are so harsh, prolonged or unnatural or unusual in their use, time or place as to occasion physical discomfort to the inhabitants of the city, or any section thereof. The standards for dBA noise level in section 7.34.040 shall apply to this section. To the extent that the noise created causes the noise level at the property line to exceed the ambient noise level by more than 1.0 decibels, it shall be presumed that the noise being created also is in violation of this section.

(b) The characteristics and conditions which should be considered in determining whether a violation of the provisions of this section exists should include, but not be limited to, the following:

(1) The level of the noise;

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

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

(4) The level of the ambient noise;

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

(6) The nature and zoning of the area from which the noise emanates and the area where it is received;

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

(8) The duration of the noise; and

(9) Whether the noise is recurrent, intermittent or constant.

(Code 1972, § 7.34.050; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.060. - Construction noise.

It is unlawful for any person between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on a legal holiday, with the exception of Columbus Day and Washington's birthday, or on Sundays to erect, construct, demolish, excavate, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. Construction activity shall not exceed 80 dBA in residential zones in the city.

(Code 1972, § 7.34.060; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.070. - Refuse vehicles and parking lot sweepers.

No person shall operate or permit to be operated a refuse compacting, processing or collection vehicle or parking lot sweeper between the hours of 7:00 p.m. to 7:00 a.m. in any residential area unless a permit has been applied for and granted by the city.

(Code 1972, § 7.34.070; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.080. - Disturbing, excessive, offensive noises; declaration of certain acts constituting.

The following activities, among others, are declared to cause loud, disturbing, excessive or offensive noises in violation of this section and are unlawful, namely:

(1) *Horns, signaling devices, etc.* Unnecessary use or operation of horns, signaling devices or other similar devices on automobiles, motorcycles or any other vehicle.

(2) *Radios, television sets, phonographs, loud speaking amplifiers and similar devices.* The use or operation of any sound production or reproduction device, radio receiving set, musical instrument, drums, phonograph, television set, loudspeakers, sound amplifier, or other similar machine or device for the producing or reproducing of sound, in such a manner as to disturb the peace, quiet or comfort of any reasonable person of normal sensitivity in any area of the city is prohibited. This provision shall not apply to any participant in a licensed parade or to any person who has been otherwise duly authorized by the city to engage in such conduct.

(3) *Animals.*

a. The keeping or maintenance, or the permitting to be kept or maintained, upon any premises owned, occupied or controlled by any person of any animal or animals which by any frequent or long-continued noise shall cause annoyance or discomfort to a reasonable person of normal sensitiveness in the vicinity.

b. The noise from any such animal or animals that disturbs two or more residents residing in separate residences adjacent to any part of the property on which the subject animal or animals are kept or maintained, or three or more residents residing in separate residences in close proximity to the

property on which the subject animal or animals are kept or maintained, shall be prima facie evidence of a violation of this section.

(4) *Hospitals, schools, libraries, rest homes, long-term medical or mental care facilities.* To make loud, disturbing, excessive noises adjacent to a hospital, school, library, rest home or long-term medical or mental care facility, which noise unreasonably interferes with the workings of such institutions or which disturbs or unduly annoys occupants in said institutions.

(5) *Playing of radios on buses and trolleys.* The operation of any radio, phonograph or tape player on an urban transit bus or trolley so as to emit noise that is audible to any other person in the vehicle is prohibited.

(6) *Playing of radios, phonographs and other sound production or reproduction devices in public parks and public parking lots and streets adjacent thereto.* The operation of any radio, phonograph, television set or any other sound production or reproduction device in any public park or any public parking lot, or street adjacent to such park or beach, without the prior written approval of the city manager or the administrator, in such a manner that such radio, phonograph, television set or sound production or reproduction device emits a sound level exceeding those found in the table in section 7.34.040.

(7) *Leaf blowers.*

a. The term "leaf blower" means any portable, hand-held or backpack, engine-powered device with a nozzle that creates a directable airstream which is capable of and intended for moving leaves and light materials.

b. No person shall operate a leaf blower in any residential zoned area between the hours of 7:00 p.m. and 8:00 a.m. on weekdays and 5:00 p.m. and 9:00 a.m. on weekends or on legal holidays.

c. No person may operate any leaf blower at a sound level in excess of 80 decibels measured at a distance of 50 feet or greater from the point of noise origin.

d. Leaf blowers shall be equipped with functional mufflers and an approved sound limiting device required to ensure that the leaf blower is not capable of generating a sound level exceeding any limit prescribed in this section.

(Code 1972, § 7.34.080; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.090. - Burglar alarms.

(a) Audible burglar alarms for structures or motor vehicles are prohibited unless the operation of such burglar alarm can be terminated within 20 minutes of being activated.

(b) Notwithstanding the requirements of this provision, any member of the county sheriff's department, Perris Division, shall have the right to take such steps as may be reasonable and necessary to disconnect any such alarm installed in any building, dwelling or motor vehicle at any time during the period of its activation. On or after 30 days from the effective date of the ordinance codified in this chapter, any building, dwelling or motor vehicle upon which a burglar alarm has been installed shall prominently display the telephone number at which communication may be made with the owner of such building, dwelling or motor vehicle.

(Code 1972, § 7.34.090; Ord. No. 1082, § 2(part), 2000)

Sec. 7.34.100. - Motor vehicles.

(a) Off-highway.

(1) Except as otherwise provided for in this chapter, it shall be unlawful to operate any motor vehicle of any

type on any site, other than on a public street or highway as defined in the California Vehicle Code, in any manner so as to cause noise in excess of those noise levels permitted for on-highway motor vehicles as specified in the table for "45-mile-per-hour or less speed limits" contained in section 23130 of the California Vehicle Code and as corrected for distances set forth in subsection (a)(2) of this section.

(2) The maximum noise level as the on-highway vehicle passes may be measured at a distance of other than 50 feet from the centerline of travel, provided the measurement is further adjusted by adding algebraically the application correction as follows:

Distance (feet)	Correction (decibels)
25	−6
28	−5
32	−4
35	−3
40	−2
45	−1
50 (preferred distance)	0
56	+1
63	+2
70	+3
80	+4
90	+5
100	+6

(b) Nothing in this section shall apply to authorized emergency vehicles when being used in emergency situations including the blowing of sirens and/or horns.

(Code 1972, § 7.34.100; Ord. No. 1082, § 2(part), 2000)

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APPENDIX 5.1:

STUDY AREA PHOTOS

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L1_E
33, 50' 27.450000", 117, 13' 0.910000"

L1_N
33, 50' 27.500000", 117, 13' 1.320000"

L1_S
33, 50' 27.500000", 117, 13' 1.590000"

L2_E
33, 50' 14.290000", 117, 12' 43.140000"

L2_N
33, 50' 14.290000", 117, 12' 43.140000"

L2_NE
33, 50' 14.200000", 117, 12' 43.170000"

L2_S
33, 50' 14.200000", 117, 12' 43.170000"

L3_N
33, 50' 8.590000", 117, 12' 31.160000"

L3_S
33, 50' 8.580000", 117, 12' 31.190000"

L3_W
33, 50' 8.590000", 117, 12' 31.160000"

L4_N
33, 49' 52.100000", 117, 12' 31.110000"

L4_NW
33, 49' 52.100000", 117, 12' 31.110000"

L4_S
33, 49' 52.130000", 117, 12' 31.140000"

L4_W
33, 49' 52.130000", 117, 12' 31.140000"

L5_E
33, 49' 41.920000", 117, 12' 30.920000"

L5_NW
33, 49' 41.920000", 117, 12' 30.920000"

L5_S
33, 49' 41.920000", 117, 12' 30.920000"

L5_W
33, 49' 41.920000", 117, 12' 30.920000"

L6_E
33, 49' 43.390000", 117, 12' 43.360000"

L6_N
,

L6_S
33, 49' 43.390000", 117, 12' 43.360000"

L6_W
,

L7_E
33, 49' 48.060000", 117, 13' 1.240000"

L7_N
33, 49' 48.080000", 117, 13' 1.270000"

L7_SW
33, 49' 48.060000", 117, 13' 1.240000"

L8_W
33, 49' 48.080000", 117, 13' 1.270000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

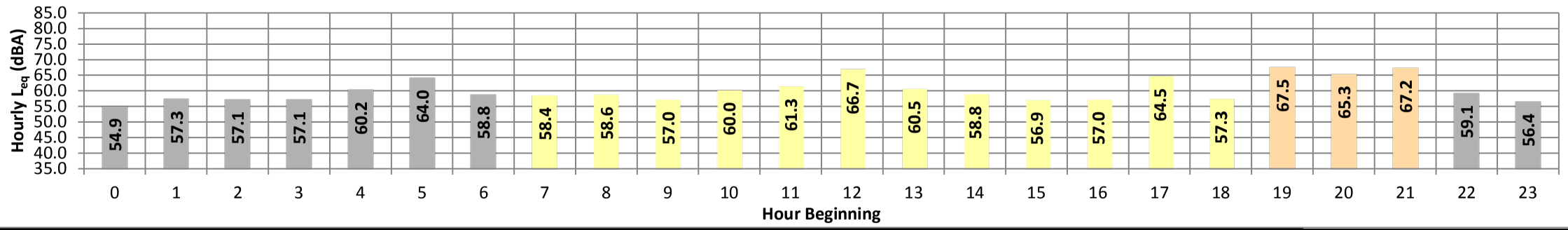
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L1 - Located north of the Project site on Redlands Avenue adjacent to an existing RV park and industrial use.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

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	54.9	80.9	42.6	66.0	62.0	57.0	54.0	49.0	47.0	44.0	44.0	43.0	54.9	10.0	64.9
	1	57.3	80.8	42.5	70.0	66.0	60.0	57.0	50.0	47.0	45.0	44.0	43.0	57.3	10.0	67.3
	2	57.1	76.3	43.0	69.0	67.0	63.0	60.0	52.0	49.0	45.0	45.0	44.0	57.1	10.0	67.1
	3	57.1	82.7	42.8	69.0	66.0	59.0	56.0	49.0	47.0	44.0	44.0	43.0	57.1	10.0	67.1
	4	60.2	82.3	44.1	72.0	69.0	66.0	64.0	56.0	51.0	46.0	46.0	45.0	60.2	10.0	70.2
	5	64.0	94.8	44.8	72.0	69.0	65.0	63.0	55.0	50.0	46.0	46.0	45.0	64.0	10.0	74.0
	6	58.8	82.0	46.4	69.0	67.0	63.0	60.0	55.0	51.0	48.0	48.0	47.0	58.8	10.0	68.8
Day	7	58.4	82.2	43.5	69.0	67.0	63.0	60.0	53.0	48.0	45.0	45.0	44.0	58.4	0.0	58.4
	8	58.6	85.8	43.1	67.0	65.0	62.0	60.0	55.0	48.0	45.0	44.0	44.0	58.6	0.0	58.6
	9	57.0	76.9	44.1	68.0	65.0	61.0	60.0	53.0	48.0	45.0	45.0	44.0	57.0	0.0	57.0
	10	60.0	81.5	43.5	73.0	70.0	65.0	62.0	56.0	50.0	45.0	45.0	44.0	60.0	0.0	60.0
	11	61.3	77.9	43.7	73.0	72.0	68.0	65.0	56.0	51.0	46.0	45.0	44.0	61.3	0.0	61.3
	12	66.7	89.8	44.0	80.0	74.0	68.0	66.0	58.0	52.0	46.0	46.0	45.0	66.7	0.0	66.7
	13	60.5	77.8	44.2	73.0	70.0	65.0	63.0	57.0	53.0	48.0	47.0	45.0	60.5	0.0	60.5
	14	58.8	76.8	45.0	70.0	68.0	65.0	62.0	55.0	52.0	47.0	47.0	46.0	58.8	0.0	58.8
	15	56.9	76.6	45.0	68.0	66.0	62.0	60.0	54.0	50.0	47.0	46.0	45.0	56.9	0.0	56.9
	16	57.0	80.9	44.5	69.0	66.0	60.0	58.0	52.0	49.0	46.0	46.0	45.0	57.0	0.0	57.0
	17	64.5	95.0	43.7	70.0	67.0	62.0	59.0	52.0	49.0	46.0	45.0	44.0	64.5	0.0	64.5
	18	57.3	78.1	44.2	69.0	66.0	62.0	60.0	54.0	51.0	47.0	47.0	45.0	57.3	0.0	57.3
Evening	19	67.5	96.5	46.1	75.0	72.0	67.0	65.0	59.0	54.0	50.0	49.0	47.0	67.5	5.0	72.5
	20	65.3	84.9	44.4	75.0	73.0	71.0	69.0	63.0	58.0	51.0	49.0	46.0	65.3	5.0	70.3
	21	67.2	95.5	46.3	75.0	72.0	68.0	66.0	61.0	59.0	51.0	49.0	47.0	67.2	5.0	72.2
Night	22	59.1	82.2	43.9	70.0	68.0	63.0	61.0	54.0	49.0	46.0	46.0	45.0	59.1	10.0	69.1
	23	56.4	79.6	43.4	68.0	66.0	61.0	58.0	51.0	47.0	45.0	45.0	44.0	56.4	10.0	66.4

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	56.9	76.6	43.1	67.0	65.0	60.0	58.0	52.0	48.0	45.0	44.0	44.0
	Max	66.7	95.0	45.0	80.0	74.0	68.0	66.0	58.0	53.0	48.0	47.0	46.0
Energy Average		61.0	Average:		70.8	68.0	63.6	61.3	54.6	50.1	46.1	45.7	44.6
Evening	Min	65.3	84.9	44.4	75.0	72.0	67.0	65.0	59.0	54.0	50.0	49.0	46.0
	Max	67.5	96.5	46.3	75.0	73.0	71.0	69.0	63.0	59.0	51.0	49.0	47.0
Energy Average		66.8	Average:		75.0	72.3	68.7	66.7	61.0	57.0	50.7	49.0	46.7
Night	Min	54.9	76.3	42.5	66.0	62.0	57.0	54.0	49.0	47.0	44.0	44.0	43.0
	Max	64.0	94.8	46.4	72.0	69.0	66.0	64.0	56.0	51.0	48.0	48.0	47.0
Energy Average		59.2	Average:		69.4	66.7	61.9	59.2	52.3	48.7	45.4	45.3	44.3

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
61.9	62.9	59.2

24-Hour CNEL (dBA)
67.5

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

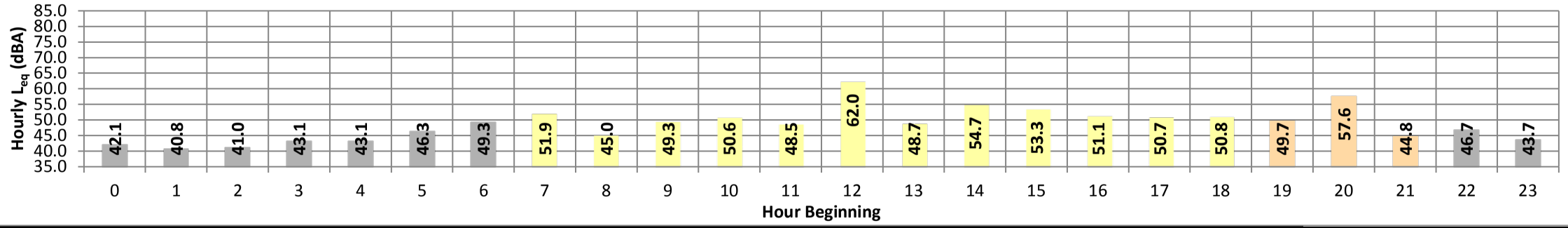
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L2 - Located east of the Project site at the southwest corner of Morgan Park.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

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	42.1	55.6	38.3	48.0	47.0	44.0	43.0	42.0	41.0	40.0	40.0	38.0	42.1	10.0	52.1
	1	40.8	53.0	38.2	45.0	44.0	43.0	42.0	41.0	40.0	38.0	38.0	38.0	40.8	10.0	50.8
	2	41.0	55.5	38.2	46.0	44.0	43.0	42.0	41.0	40.0	38.0	38.0	38.0	41.0	10.0	51.0
	3	43.1	58.5	39.6	48.0	47.0	45.0	45.0	43.0	42.0	40.0	40.0	40.0	43.1	10.0	53.1
	4	43.1	56.0	40.0	47.0	46.0	45.0	44.0	43.0	42.0	41.0	40.0	40.0	43.1	10.0	53.1
	5	46.3	56.5	41.2	53.0	52.0	49.0	48.0	46.0	45.0	42.0	42.0	41.0	46.3	10.0	56.3
	6	49.3	60.5	43.8	57.0	56.0	53.0	52.0	49.0	47.0	45.0	45.0	44.0	49.3	10.0	59.3
Day	7	51.9	70.0	41.4	64.0	61.0	56.0	55.0	50.0	45.0	43.0	43.0	42.0	51.9	0.0	51.9
	8	45.0	58.0	41.2	52.0	50.0	48.0	47.0	44.0	43.0	42.0	42.0	41.0	45.0	0.0	45.0
	9	49.3	72.2	39.9	58.0	54.0	49.0	47.0	44.0	42.0	41.0	40.0	40.0	49.3	0.0	49.3
	10	50.6	71.7	38.3	63.0	59.0	55.0	51.0	44.0	41.0	40.0	39.0	38.0	50.6	0.0	50.6
	11	48.5	69.7	38.3	59.0	57.0	52.0	50.0	45.0	42.0	40.0	40.0	38.0	48.5	0.0	48.5
	12	62.0	86.2	39.9	77.0	64.0	53.0	49.0	45.0	43.0	41.0	41.0	40.0	62.0	0.0	62.0
	13	48.7	61.8	40.8	57.0	55.0	53.0	52.0	49.0	46.0	43.0	42.0	41.0	48.7	0.0	48.7
	14	54.7	73.5	43.0	66.0	64.0	59.0	57.0	53.0	50.0	46.0	45.0	44.0	54.7	0.0	54.7
	15	53.3	69.6	42.8	64.0	61.0	58.0	56.0	52.0	49.0	45.0	45.0	43.0	53.3	0.0	53.3
	16	51.1	62.1	43.1	58.0	56.0	54.0	53.0	51.0	50.0	46.0	45.0	44.0	51.1	0.0	51.1
	17	50.7	65.7	43.8	58.0	56.0	54.0	53.0	51.0	49.0	46.0	46.0	45.0	50.7	0.0	50.7
	18	50.8	69.6	42.8	61.0	56.0	53.0	52.0	50.0	48.0	45.0	45.0	43.0	50.8	0.0	50.8
Evening	19	49.7	65.1	42.9	59.0	57.0	54.0	52.0	49.0	47.0	45.0	44.0	44.0	49.7	5.0	54.7
	20	57.6	84.1	42.8	69.0	63.0	58.0	54.0	49.0	47.0	44.0	44.0	43.0	57.6	5.0	62.6
	21	44.8	60.2	38.2	55.0	52.0	48.0	46.0	43.0	42.0	40.0	40.0	38.0	44.8	5.0	49.8
Night	22	46.7	65.0	38.2	60.0	55.0	49.0	46.0	42.0	41.0	40.0	39.0	38.0	46.7	10.0	56.7
	23	43.7	62.3	38.3	54.0	51.0	46.0	45.0	42.0	41.0	40.0	39.0	38.0	43.7	10.0	53.7

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	45.0	58.0	38.3	52.0	50.0	48.0	47.0	44.0	41.0	40.0	39.0	38.0
	Max	62.0	86.2	43.8	77.0	64.0	59.0	57.0	53.0	50.0	46.0	46.0	45.0
Energy Average		54.0	Average:		61.4	57.8	53.7	51.8	48.2	45.7	43.2	42.8	41.6
Evening	Min	44.8	60.2	38.2	55.0	52.0	48.0	46.0	43.0	42.0	40.0	40.0	38.0
	Max	57.6	84.1	42.9	69.0	63.0	58.0	54.0	49.0	47.0	45.0	44.0	44.0
Energy Average		53.7	Average:		61.0	57.3	53.3	50.7	47.0	45.3	43.0	42.7	41.7
Night	Min	40.8	53.0	38.2	45.0	44.0	43.0	42.0	41.0	40.0	38.0	38.0	38.0
	Max	49.3	65.0	43.8	60.0	56.0	53.0	52.0	49.0	47.0	45.0	45.0	44.0
Energy Average		44.9	Average:		50.9	49.1	46.3	45.2	43.2	42.1	40.4	40.1	39.4

L_{eq} (dBA)

24-Hour	Daytime	Nighttime
52.2	53.9	44.9

24-Hour CNEL (dBA)

55.2

24-Hour Noise Level Measurement Summary

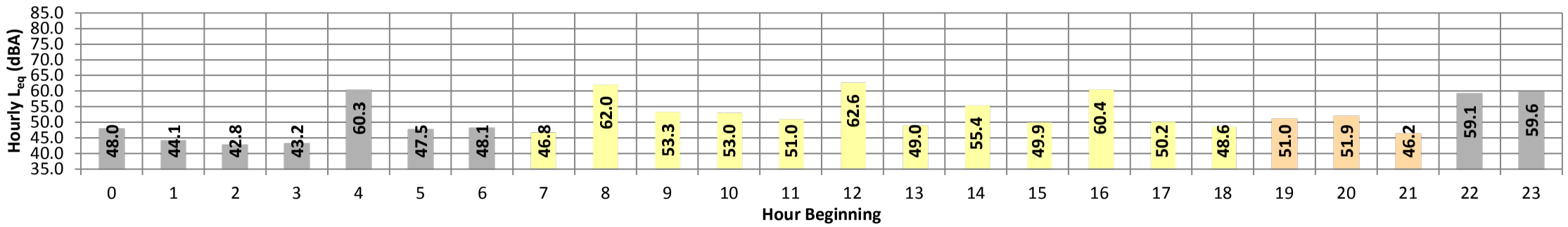
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L3 - Located east of the Project site adjacent to existing residential homes west of Evans Road.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

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	48.0	81.4	40.6	50.0	48.0	46.0	45.0	44.0	43.0	41.0	41.0	40.0	48.0	10.0	58.0
	1	44.1	64.5	40.5	52.0	49.0	45.0	44.0	43.0	42.0	41.0	40.0	40.0	44.1	10.0	54.1
	2	42.8	58.8	40.4	46.0	45.0	44.0	44.0	43.0	42.0	41.0	40.0	40.0	42.8	10.0	52.8
	3	43.2	61.5	39.1	49.0	46.0	45.0	44.0	43.0	42.0	40.0	40.0	40.0	43.2	10.0	53.2
	4	60.3	89.2	40.2	70.0	61.0	50.0	46.0	44.0	43.0	42.0	42.0	41.0	60.3	10.0	70.3
	5	47.5	62.9	42.0	56.0	53.0	50.0	49.0	47.0	46.0	43.0	43.0	42.0	47.5	10.0	57.5
	6	48.1	64.1	43.8	53.0	52.0	50.0	49.0	48.0	47.0	46.0	45.0	44.0	48.1	10.0	58.1
Day	7	46.8	62.1	40.9	55.0	53.0	48.0	48.0	46.0	45.0	43.0	42.0	42.0	46.8	0.0	46.8
	8	62.0	92.3	40.4	64.0	60.0	53.0	51.0	45.0	43.0	42.0	41.0	40.0	62.0	0.0	62.0
	9	53.3	76.2	40.5	65.0	63.0	54.0	50.0	45.0	43.0	41.0	41.0	40.0	53.3	0.0	53.3
	10	53.0	75.2	39.1	67.0	61.0	54.0	51.0	46.0	43.0	41.0	41.0	40.0	53.0	0.0	53.0
	11	51.0	71.3	40.4	63.0	60.0	55.0	53.0	46.0	44.0	42.0	41.0	40.0	51.0	0.0	51.0
	12	62.6	88.9	41.9	77.0	64.0	53.0	49.0	46.0	45.0	43.0	43.0	43.0	62.6	0.0	62.6
	13	49.0	62.9	42.8	57.0	56.0	53.0	52.0	48.0	47.0	44.0	44.0	43.0	49.0	0.0	49.0
	14	55.4	76.3	43.4	68.0	63.0	57.0	55.0	51.0	49.0	46.0	45.0	44.0	55.4	0.0	55.4
	15	49.9	65.1	42.9	59.0	57.0	53.0	52.0	49.0	47.0	45.0	44.0	44.0	49.9	0.0	49.9
	16	60.4	89.8	43.0	60.0	58.0	54.0	52.0	49.0	48.0	45.0	45.0	44.0	60.4	0.0	60.4
	17	50.2	68.3	42.9	59.0	55.0	52.0	51.0	49.0	48.0	45.0	45.0	44.0	50.2	0.0	50.2
	18	48.6	71.1	42.0	56.0	54.0	51.0	50.0	48.0	46.0	45.0	44.0	43.0	48.6	0.0	48.6
Evening	19	51.0	68.7	43.1	61.0	60.0	56.0	54.0	49.0	47.0	45.0	44.0	44.0	51.0	5.0	56.0
	20	51.9	68.7	43.2	63.0	61.0	57.0	54.0	50.0	47.0	45.0	44.0	44.0	51.9	5.0	56.9
	21	46.2	62.0	39.1	56.0	54.0	50.0	48.0	45.0	43.0	41.0	41.0	40.0	46.2	5.0	51.2
Night	22	59.1	90.3	41.4	65.0	60.0	55.0	52.0	49.0	47.0	43.0	42.0	42.0	59.1	10.0	69.1
	23	59.6	91.2	39.9	63.0	57.0	50.0	48.0	45.0	43.0	42.0	41.0	40.0	59.6	10.0	69.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	46.8	62.1	39.1	55.0	53.0	48.0	48.0	45.0	43.0	41.0	41.0	40.0
	Max	62.6	92.3	43.4	77.0	64.0	57.0	55.0	51.0	49.0	46.0	45.0	44.0
Energy Average		56.8	Average:		62.5	58.7	53.1	51.2	47.3	45.7	43.5	43.0	42.3
Evening	Min	46.2	62.0	39.1	56.0	54.0	50.0	48.0	45.0	43.0	41.0	41.0	40.0
	Max	51.9	68.7	43.2	63.0	61.0	57.0	54.0	50.0	47.0	45.0	44.0	44.0
Energy Average		50.3	Average:		60.0	58.3	54.3	52.0	48.0	45.7	43.7	43.0	42.7
Night	Min	42.8	58.8	39.1	46.0	45.0	44.0	44.0	43.0	42.0	40.0	40.0	40.0
	Max	60.3	91.2	43.8	70.0	61.0	55.0	52.0	49.0	47.0	46.0	45.0	44.0
Energy Average		55.3	Average:		56.0	52.3	48.3	46.8	45.1	43.9	42.1	41.6	41.0

L_{eq} (dBA)

24-Hour	*Daytime*	*Nighttime*
55.8	**56.1**	**55.3**

24-Hour CNEL (dBA)

61.9

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

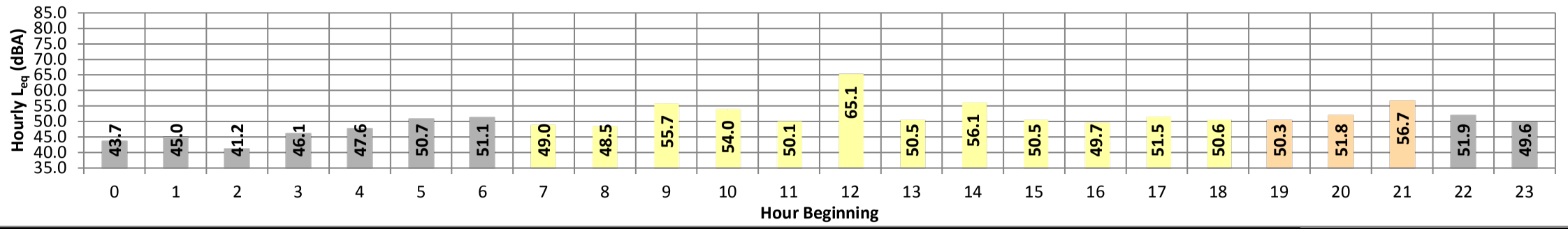
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L4 - Located east of the Project site adjacent to existing residential homes north of Rider Street.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	43.7	60.7	37.9	53.0	51.0	47.0	46.0	43.0	41.0	38.0	38.0	38.0	43.7	10.0	53.7
	1	45.0	71.5	38.7	53.0	51.0	47.0	46.0	42.0	40.0	38.0	38.0	38.0	45.0	10.0	55.0
	2	41.2	60.5	38.5	46.0	45.0	44.0	43.0	41.0	40.0	38.0	38.0	38.0	41.2	10.0	51.2
	3	46.1	62.9	38.8	56.0	53.0	49.0	48.0	45.0	43.0	40.0	40.0	40.0	46.1	10.0	56.1
	4	47.6	63.8	40.9	55.0	53.0	51.0	50.0	48.0	45.0	42.0	42.0	41.0	47.6	10.0	57.6
	5	50.7	69.7	42.9	59.0	57.0	55.0	53.0	50.0	48.0	44.0	44.0	43.0	50.7	10.0	60.7
	6	51.1	66.9	44.5	59.0	56.0	54.0	53.0	51.0	49.0	47.0	47.0	46.0	51.1	10.0	61.1
Day	7	49.0	66.1	40.6	58.0	56.0	52.0	51.0	48.0	46.0	43.0	43.0	42.0	49.0	0.0	49.0
	8	48.5	66.4	40.5	58.0	55.0	52.0	51.0	47.0	45.0	42.0	41.0	41.0	48.5	0.0	48.5
	9	55.7	82.6	40.1	63.0	57.0	53.0	50.0	47.0	45.0	42.0	41.0	40.0	55.7	0.0	55.7
	10	54.0	74.6	38.8	68.0	60.0	55.0	53.0	48.0	45.0	41.0	40.0	40.0	54.0	0.0	54.0
	11	50.1	70.7	39.8	60.0	57.0	54.0	52.0	47.0	45.0	41.0	40.0	40.0	50.1	0.0	50.1
	12	65.1	89.5	41.1	80.0	60.0	54.0	52.0	48.0	47.0	43.0	42.0	41.0	65.1	0.0	65.1
	13	50.5	66.0	43.4	59.0	57.0	54.0	53.0	50.0	48.0	45.0	45.0	44.0	50.5	0.0	50.5
	14	56.1	80.5	44.9	65.0	61.0	57.0	55.0	52.0	50.0	47.0	47.0	46.0	56.1	0.0	56.1
	15	50.5	65.8	42.1	57.0	56.0	54.0	53.0	50.0	49.0	46.0	45.0	44.0	50.5	0.0	50.5
	16	49.7	68.4	41.4	58.0	56.0	53.0	52.0	49.0	47.0	44.0	44.0	43.0	49.7	0.0	49.7
	17	51.5	72.2	43.5	62.0	58.0	53.0	52.0	50.0	48.0	45.0	45.0	44.0	51.5	0.0	51.5
	18	50.6	67.4	41.8	60.0	57.0	55.0	53.0	50.0	48.0	44.0	43.0	42.0	50.6	0.0	50.6
Evening	19	50.3	69.3	41.6	60.0	58.0	55.0	53.0	49.0	47.0	44.0	43.0	42.0	50.3	5.0	55.3
	20	51.8	76.5	40.6	59.0	56.0	53.0	52.0	49.0	47.0	44.0	44.0	42.0	51.8	5.0	56.8
	21	56.7	71.2	40.1	69.0	68.0	67.0	55.0	51.0	49.0	44.0	42.0	40.0	56.7	5.0	61.7
Night	22	51.9	69.1	38.8	63.0	60.0	56.0	55.0	50.0	47.0	43.0	41.0	40.0	51.9	10.0	61.9
	23	49.6	76.9	35.8	59.0	56.0	51.0	50.0	46.0	43.0	35.0	35.0	35.0	49.6	10.0	59.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	48.5	65.8	38.8	57.0	55.0	52.0	50.0	47.0	45.0	41.0	40.0	40.0
	Max	65.1	89.5	44.9	80.0	61.0	57.0	55.0	52.0	50.0	47.0	47.0	46.0
Energy Average		56.3	Average:		62.3	57.5	53.8	52.3	48.8	46.9	43.6	43.0	42.3
Evening	Min	50.3	69.3	40.1	59.0	56.0	53.0	52.0	49.0	47.0	44.0	42.0	40.0
	Max	56.7	76.5	41.6	69.0	68.0	67.0	55.0	51.0	49.0	44.0	44.0	42.0
Energy Average		53.8	Average:		62.7	60.7	58.3	53.3	49.7	47.7	44.0	43.0	41.3
Night	Min	41.2	60.5	35.8	46.0	45.0	44.0	43.0	41.0	40.0	35.0	35.0	35.0
	Max	51.9	76.9	44.5	63.0	60.0	56.0	55.0	51.0	49.0	47.0	47.0	46.0
Energy Average		48.6	Average:		55.9	53.6	50.4	49.3	46.2	44.0	40.6	40.3	39.9

L_{eq} (dBA)

24-Hour	*Daytime*	*Nighttime*
54.3	**55.9**	**48.6**

24-Hour CNEL (dBA)

57.7

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

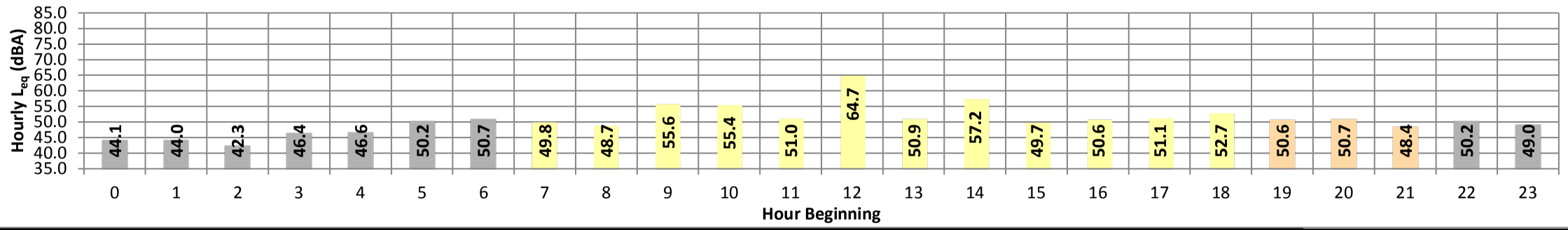
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L5 - Located southeast of the Project site adjacent to residential homes on Parula Street.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	44.1	64.6	39.9	52.0	49.0	46.0	45.0	43.0	42.0	41.0	41.0	40.0	44.1	10.0	54.1
	1	44.0	65.3	40.9	51.0	48.0	45.0	44.0	43.0	42.0	41.0	41.0	41.0	44.0	10.0	54.0
	2	42.3	53.6	39.9	45.0	44.0	43.0	43.0	42.0	42.0	41.0	41.0	40.0	42.3	10.0	52.3
	3	46.4	64.7	41.2	53.0	51.0	49.0	48.0	46.0	45.0	42.0	42.0	42.0	46.4	10.0	56.4
	4	46.6	57.5	42.7	52.0	51.0	49.0	48.0	46.0	45.0	44.0	43.0	43.0	46.6	10.0	56.6
	5	50.2	62.4	44.2	58.0	57.0	54.0	52.0	50.0	48.0	46.0	45.0	45.0	50.2	10.0	60.2
	6	50.7	60.7	46.6	56.0	55.0	53.0	52.0	50.0	49.0	48.0	48.0	47.0	50.7	10.0	60.7
Day	7	49.8	64.0	44.6	57.0	55.0	53.0	52.0	49.0	48.0	46.0	46.0	45.0	49.8	0.0	49.8
	8	48.7	62.8	44.3	56.0	54.0	52.0	51.0	48.0	47.0	45.0	45.0	45.0	48.7	0.0	48.7
	9	55.6	80.5	43.9	63.0	57.0	52.0	51.0	48.0	47.0	45.0	45.0	44.0	55.6	0.0	55.6
	10	55.4	77.6	42.2	69.0	63.0	55.0	53.0	48.0	46.0	44.0	44.0	43.0	55.4	0.0	55.4
	11	51.0	71.7	42.0	60.0	58.0	55.0	53.0	48.0	46.0	43.0	43.0	42.0	51.0	0.0	51.0
	12	64.7	88.5	43.4	81.0	62.0	55.0	52.0	49.0	48.0	45.0	45.0	44.0	64.7	0.0	64.7
	13	50.9	69.2	43.2	60.0	58.0	55.0	53.0	50.0	48.0	46.0	45.0	44.0	50.9	0.0	50.9
	14	57.2	82.4	44.2	68.0	64.0	58.0	55.0	51.0	49.0	46.0	46.0	45.0	57.2	0.0	57.2
	15	49.7	64.4	42.8	57.0	56.0	54.0	53.0	49.0	47.0	45.0	44.0	43.0	49.7	0.0	49.7
	16	50.6	75.0	42.7	59.0	56.0	54.0	52.0	49.0	47.0	44.0	44.0	43.0	50.6	0.0	50.6
	17	51.1	68.2	42.4	63.0	60.0	55.0	52.0	49.0	47.0	45.0	44.0	43.0	51.1	0.0	51.1
	18	52.7	71.7	41.5	65.0	62.0	56.0	54.0	49.0	47.0	44.0	44.0	43.0	52.7	0.0	52.7
Evening	19	50.6	67.0	41.5	60.0	59.0	56.0	54.0	49.0	47.0	44.0	43.0	42.0	50.6	5.0	55.6
	20	50.7	71.5	42.1	60.0	57.0	54.0	53.0	49.0	47.0	44.0	44.0	43.0	50.7	5.0	55.7
	21	48.4	65.7	39.9	57.0	55.0	52.0	51.0	47.0	45.0	42.0	41.0	40.0	48.4	5.0	53.4
Night	22	50.2	67.7	39.8	61.0	58.0	54.0	51.0	48.0	46.0	42.0	41.0	40.0	50.2	10.0	60.2
	23	49.0	59.1	44.2	54.0	53.0	52.0	51.0	49.0	48.0	46.0	45.0	45.0	49.0	10.0	59.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	48.7	62.8	41.5	56.0	54.0	52.0	51.0	48.0	46.0	43.0	43.0	42.0
	Max	64.7	88.5	44.6	81.0	64.0	58.0	55.0	51.0	49.0	46.0	46.0	45.0
Energy Average		56.3	Average:		63.2	58.8	54.5	52.6	48.9	47.3	44.8	44.6	43.7
Evening	Min	48.4	65.7	39.9	57.0	55.0	52.0	51.0	47.0	45.0	42.0	41.0	40.0
	Max	50.7	71.5	42.1	60.0	59.0	56.0	54.0	49.0	47.0	44.0	44.0	43.0
Energy Average		50.0	Average:		59.0	57.0	54.0	52.7	48.3	46.3	43.3	42.7	41.7
Night	Min	42.3	53.6	39.8	45.0	44.0	43.0	43.0	42.0	42.0	41.0	41.0	40.0
	Max	50.7	67.7	46.6	61.0	58.0	54.0	52.0	50.0	49.0	48.0	48.0	47.0
Energy Average		48.0	Average:		53.6	51.8	49.4	48.2	46.3	45.2	43.4	43.0	42.6

L_{eq} (dBA)

24-Hour	Daytime	Nighttime
54.0	55.6	48.0

24-Hour CNEL (dBA)

56.9

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

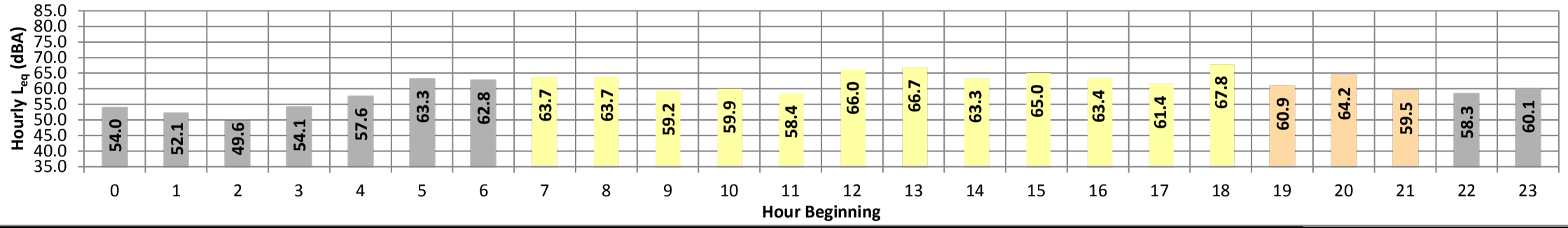
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L6 - Located south of the Project site across Rider Street adjacent to an existing residential home.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

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	54.0	78.3	40.2	65.0	61.0	56.0	54.0	49.0	44.0	41.0	41.0	41.0	54.0	10.0	64.0
	1	52.1	79.5	40.2	63.0	58.0	54.0	52.0	47.0	43.0	41.0	41.0	40.0	52.1	10.0	62.1
	2	49.6	74.7	40.2	60.0	56.0	52.0	49.0	44.0	42.0	41.0	41.0	40.0	49.6	10.0	59.6
	3	54.1	76.7	40.7	66.0	63.0	59.0	56.0	49.0	45.0	42.0	42.0	41.0	54.1	10.0	64.1
	4	57.6	80.6	42.2	69.0	67.0	63.0	60.0	55.0	51.0	45.0	44.0	43.0	57.6	10.0	67.6
	5	63.3	92.3	44.5	72.0	69.0	65.0	63.0	58.0	54.0	48.0	47.0	45.0	63.3	10.0	73.3
	6	62.8	91.5	46.4	71.0	67.0	63.0	61.0	57.0	54.0	50.0	50.0	48.0	62.8	10.0	72.8
Day	7	63.7	91.2	43.5	74.0	69.0	64.0	62.0	56.0	52.0	47.0	46.0	45.0	63.7	0.0	63.7
	8	63.7	90.2	42.9	74.0	69.0	65.0	62.0	55.0	51.0	45.0	44.0	43.0	63.7	0.0	63.7
	9	59.2	83.2	41.7	70.0	68.0	64.0	61.0	54.0	49.0	44.0	43.0	42.0	59.2	0.0	59.2
	10	59.9	82.0	41.3	72.0	70.0	65.0	62.0	55.0	50.0	44.0	43.0	42.0	59.9	0.0	59.9
	11	58.4	88.1	39.9	70.0	67.0	61.0	59.0	52.0	48.0	43.0	42.0	41.0	58.4	0.0	58.4
	12	66.0	89.9	41.0	80.0	71.0	64.0	61.0	53.0	49.0	44.0	43.0	41.0	66.0	0.0	66.0
	13	66.7	96.3	42.6	74.0	70.0	65.0	62.0	56.0	52.0	46.0	45.0	43.0	66.7	0.0	66.7
	14	63.3	91.8	44.5	73.0	70.0	66.0	64.0	58.0	55.0	50.0	49.0	47.0	63.3	0.0	63.3
	15	65.0	94.5	41.6	74.0	70.0	65.0	62.0	56.0	52.0	47.0	46.0	43.0	65.0	0.0	65.0
	16	63.4	90.1	40.8	75.0	71.0	66.0	64.0	57.0	54.0	48.0	46.0	43.0	63.4	0.0	63.4
	17	61.4	82.8	42.3	72.0	70.0	67.0	64.0	59.0	56.0	50.0	48.0	45.0	61.4	0.0	61.4
	18	67.8	95.1	42.7	75.0	72.0	68.0	65.0	59.0	56.0	50.0	48.0	45.0	67.8	0.0	67.8
Evening	19	60.9	79.8	42.0	72.0	70.0	66.0	64.0	59.0	56.0	50.0	47.0	45.0	60.9	5.0	65.9
	20	64.2	93.3	42.1	73.0	71.0	67.0	64.0	59.0	56.0	49.0	47.0	45.0	64.2	5.0	69.2
	21	59.5	86.2	37.6	70.0	68.0	64.0	62.0	56.0	52.0	46.0	43.0	40.0	59.5	5.0	64.5
Night	22	58.3	80.4	37.9	70.0	67.0	63.0	61.0	53.0	49.0	42.0	41.0	39.0	58.3	10.0	68.3
	23	60.1	89.7	39.3	69.0	65.0	60.0	57.0	52.0	48.0	43.0	42.0	41.0	60.1	10.0	70.1

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	58.4	82.0	39.9	70.0	67.0	61.0	59.0	52.0	48.0	43.0	42.0	41.0
	Max	67.8	96.3	44.5	80.0	72.0	68.0	65.0	59.0	56.0	50.0	49.0	47.0
Energy Average		64.1	Average:		73.6	69.8	65.0	62.3	55.8	52.0	46.5	45.3	43.3
Evening	Min	59.5	79.8	37.6	70.0	68.0	64.0	62.0	56.0	52.0	46.0	43.0	40.0
	Max	64.2	93.3	42.1	73.0	71.0	67.0	64.0	59.0	56.0	50.0	47.0	45.0
Energy Average		62.0	Average:		71.7	69.7	65.7	63.3	58.0	54.7	48.3	45.7	43.3
Night	Min	49.6	74.7	37.9	60.0	56.0	52.0	49.0	44.0	42.0	41.0	41.0	39.0
	Max	63.3	92.3	46.4	72.0	69.0	65.0	63.0	58.0	54.0	50.0	50.0	48.0
Energy Average		59.0	Average:		67.2	63.7	59.4	57.0	51.6	47.8	43.7	43.2	42.0

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
62.5	63.7	59.0

24-Hour CNEL (dBA)
66.9

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

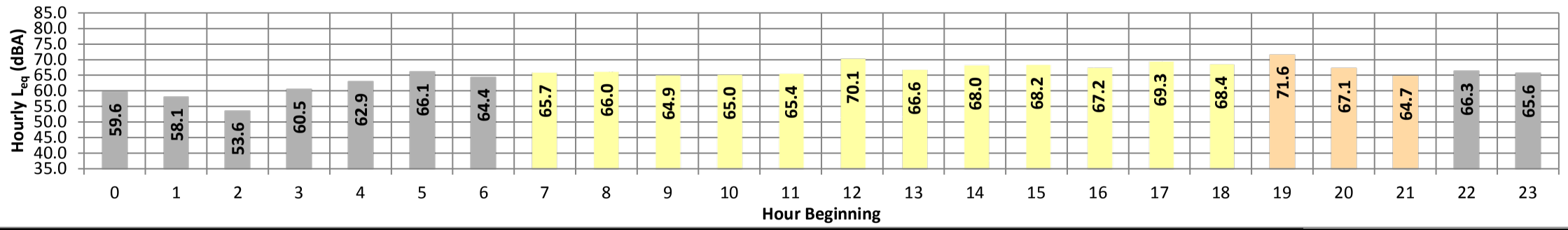
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L7 - Located south of the Project site on the southeast corner of Redlands Avenue and Rider Street near existing residential homes.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	59.6	83.3	36.4	71.0	69.0	65.0	62.0	50.0	43.0	37.0	36.0	36.0	59.6	10.0	69.6
	1	58.1	87.6	36.4	68.0	66.0	61.0	58.0	46.0	39.0	36.0	36.0	36.0	58.1	10.0	68.1
	2	53.6	74.9	36.4	67.0	65.0	58.0	54.0	42.0	39.0	39.0	39.0	38.0	53.6	10.0	63.6
	3	60.5	88.8	39.1	70.0	69.0	65.0	63.0	53.0	44.0	39.0	39.0	39.0	60.5	10.0	70.5
	4	62.9	80.1	42.1	73.0	71.0	69.0	67.0	62.0	56.0	46.0	44.0	42.0	62.9	10.0	72.9
	5	66.1	93.2	45.1	75.0	73.0	70.0	69.0	65.0	59.0	49.0	48.0	46.0	66.1	10.0	76.1
	6	64.4	81.9	49.4	74.0	72.0	70.0	68.0	64.0	59.0	54.0	53.0	52.0	64.4	10.0	74.4
Day	7	65.7	89.2	48.7	75.0	73.0	70.0	68.0	64.0	60.0	54.0	53.0	51.0	65.7	0.0	65.7
	8	66.0	87.2	49.8	77.0	74.0	70.0	69.0	64.0	59.0	53.0	52.0	51.0	66.0	0.0	66.0
	9	64.9	85.0	46.8	76.0	73.0	69.0	68.0	63.0	57.0	51.0	50.0	49.0	64.9	0.0	64.9
	10	65.0	84.7	42.8	76.0	73.0	70.0	68.0	64.0	59.0	51.0	50.0	47.0	65.0	0.0	65.0
	11	65.4	90.8	42.4	74.0	72.0	70.0	69.0	64.0	58.0	49.0	47.0	44.0	65.4	0.0	65.4
	12	70.1	91.7	45.0	84.0	78.0	71.0	69.0	64.0	59.0	52.0	50.0	47.0	70.1	0.0	70.1
	13	66.6	86.6	46.8	77.0	75.0	71.0	70.0	66.0	61.0	52.0	51.0	49.0	66.6	0.0	66.6
	14	68.0	89.1	45.9	78.0	75.0	72.0	71.0	67.0	63.0	55.0	52.0	48.0	68.0	0.0	68.0
	15	68.2	97.0	43.9	76.0	74.0	71.0	70.0	66.0	61.0	50.0	48.0	45.0	68.2	0.0	68.2
	16	67.2	85.4	42.5	77.0	75.0	72.0	71.0	67.0	62.0	52.0	49.0	46.0	67.2	0.0	67.2
	17	69.3	92.7	42.3	78.0	76.0	72.0	71.0	67.0	63.0	50.0	48.0	45.0	69.3	0.0	69.3
	18	68.4	89.2	43.3	79.0	76.0	72.0	71.0	67.0	62.0	53.0	50.0	47.0	68.4	0.0	68.4
Evening	19	71.6	102.4	43.4	78.0	74.0	72.0	70.0	66.0	61.0	51.0	48.0	44.0	71.6	5.0	76.6
	20	67.1	89.7	43.9	77.0	74.0	71.0	70.0	66.0	61.0	51.0	49.0	46.0	67.1	5.0	72.1
	21	64.7	87.3	39.3	74.0	72.0	70.0	69.0	64.0	57.0	44.0	42.0	40.0	64.7	5.0	69.7
Night	22	66.3	93.6	39.3	75.0	73.0	70.0	68.0	63.0	56.0	45.0	42.0	40.0	66.3	10.0	76.3
	23	65.6	90.5	39.2	77.0	72.0	69.0	66.0	58.0	49.0	42.0	41.0	39.0	65.6	10.0	75.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	64.9	84.7	42.3	74.0	72.0	69.0	68.0	63.0	57.0	49.0	47.0	44.0
	Max	70.1	97.0	49.8	84.0	78.0	72.0	71.0	67.0	63.0	55.0	53.0	51.0
Energy Average		67.4	Average:		77.3	74.5	70.8	69.6	65.3	60.3	51.8	50.0	47.4
Evening	Min	64.7	87.3	39.3	74.0	72.0	70.0	69.0	64.0	57.0	44.0	42.0	40.0
	Max	71.6	102.4	43.9	78.0	74.0	72.0	70.0	66.0	61.0	51.0	49.0	46.0
Energy Average		68.8	Average:		76.3	73.3	71.0	69.7	65.3	59.7	48.7	46.3	43.3
Night	Min	53.6	74.9	36.4	67.0	65.0	58.0	54.0	42.0	39.0	36.0	36.0	36.0
	Max	66.3	93.6	49.4	77.0	73.0	70.0	69.0	65.0	59.0	54.0	53.0	52.0
Energy Average		63.4	Average:		72.2	70.0	66.3	63.9	55.9	49.3	43.0	42.0	40.9

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
66.5	67.7	63.4

24-Hour CNEL (dBA)
71.4

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

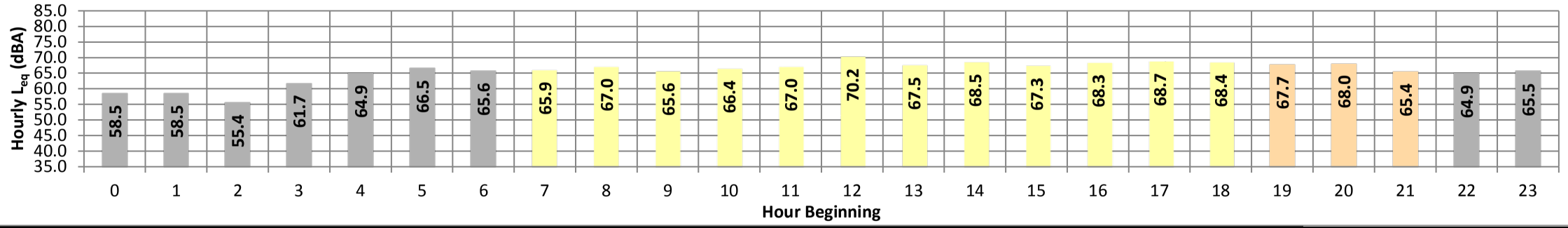
Date: Thursday, July 19, 2018
Project: Rider 2 and 4

Location: L8 - Located southwest of the Project site adjacent to Rider Street and nearby residential homes.

Meter: Piccolo I

JN: 11559
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	58.5	77.5	36.0	72.0	69.0	65.0	61.0	47.0	40.0	38.0	37.0	36.0	58.5	10.0	68.5
	1	58.5	81.4	36.0	72.0	69.0	63.0	59.0	45.0	40.0	37.0	36.0	36.0	58.5	10.0	68.5
	2	55.4	76.1	36.0	69.0	67.0	60.0	54.0	41.0	39.0	36.0	36.0	36.0	55.4	10.0	65.4
	3	61.7	90.0	36.0	72.0	70.0	66.0	64.0	52.0	43.0	37.0	36.0	36.0	61.7	10.0	71.7
	4	64.9	82.1	39.0	75.0	73.0	71.0	69.0	64.0	56.0	43.0	42.0	40.0	64.9	10.0	74.9
	5	66.5	83.9	41.9	77.0	75.0	72.0	71.0	66.0	60.0	48.0	46.0	43.0	66.5	10.0	76.5
	6	65.6	83.2	49.5	76.0	74.0	71.0	70.0	65.0	59.0	55.0	53.0	51.0	65.6	10.0	75.6
Day	7	65.9	85.7	48.7	75.0	73.0	71.0	70.0	65.0	61.0	55.0	54.0	50.0	65.9	0.0	65.9
	8	67.0	88.7	50.8	77.0	75.0	72.0	70.0	65.0	60.0	55.0	54.0	52.0	67.0	0.0	67.0
	9	65.6	85.1	48.0	77.0	74.0	71.0	69.0	64.0	58.0	51.0	50.0	49.0	65.6	0.0	65.6
	10	66.4	85.9	43.5	77.0	75.0	72.0	70.0	65.0	59.0	51.0	50.0	48.0	66.4	0.0	66.4
	11	67.0	93.7	40.8	76.0	74.0	72.0	70.0	64.0	57.0	47.0	45.0	42.0	67.0	0.0	67.0
	12	70.2	90.5	45.9	84.0	77.0	72.0	71.0	65.0	60.0	53.0	52.0	49.0	70.2	0.0	70.2
	13	67.5	85.2	46.7	77.0	75.0	73.0	72.0	67.0	62.0	53.0	51.0	49.0	67.5	0.0	67.5
	14	68.5	84.9	44.1	78.0	76.0	74.0	72.0	68.0	64.0	53.0	49.0	46.0	68.5	0.0	68.5
	15	67.3	83.2	42.0	77.0	75.0	73.0	72.0	68.0	61.0	48.0	46.0	44.0	67.3	0.0	67.3
	16	68.3	86.9	43.6	78.0	76.0	74.0	72.0	68.0	63.0	49.0	47.0	44.0	68.3	0.0	68.3
	17	68.7	89.1	42.4	78.0	76.0	74.0	73.0	69.0	63.0	49.0	47.0	44.0	68.7	0.0	68.7
	18	68.4	87.3	42.0	78.0	76.0	74.0	72.0	68.0	62.0	49.0	47.0	44.0	68.4	0.0	68.4
Evening	19	67.7	86.4	42.1	77.0	75.0	73.0	72.0	67.0	61.0	47.0	46.0	44.0	67.7	5.0	72.7
	20	68.0	91.7	41.9	77.0	75.0	73.0	72.0	67.0	61.0	48.0	46.0	43.0	68.0	5.0	73.0
	21	65.4	83.0	36.0	75.0	74.0	72.0	70.0	65.0	56.0	43.0	41.0	39.0	65.4	5.0	70.4
Night	22	64.9	85.0	37.7	75.0	73.0	71.0	70.0	64.0	55.0	43.0	40.0	39.0	64.9	10.0	74.9
	23	65.5	91.5	36.0	76.0	73.0	70.0	68.0	57.0	48.0	40.0	39.0	38.0	65.5	10.0	75.5

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	65.6	83.2	40.8	75.0	73.0	71.0	69.0	64.0	57.0	47.0	45.0	42.0
	Max	70.2	93.7	50.8	84.0	77.0	74.0	73.0	69.0	64.0	55.0	54.0	52.0
Energy Average		67.8	Average:		77.7	75.2	72.7	71.1	66.3	60.8	51.1	49.3	46.8
Evening	Min	65.4	83.0	36.0	75.0	74.0	72.0	70.0	65.0	56.0	43.0	41.0	39.0
	Max	68.0	91.7	42.1	77.0	75.0	73.0	72.0	67.0	61.0	48.0	46.0	44.0
Energy Average		67.2	Average:		76.3	74.7	72.7	71.3	66.3	59.3	46.0	44.3	42.0
Night	Min	55.4	76.1	36.0	69.0	67.0	60.0	54.0	41.0	39.0	36.0	36.0	36.0
	Max	66.5	91.5	49.5	77.0	75.0	72.0	71.0	66.0	60.0	55.0	53.0	51.0
Energy Average		63.7	Average:		73.8	71.4	67.7	65.1	55.7	48.9	41.9	40.6	39.4

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
66.5	67.6	63.7

24-Hour CNEL (dBA)
71.4

URBAN CROSSROADS

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS AT RIGHT-OF-WAY

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: n/o Harley Knox Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,951 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,592 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.90	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-9.39	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.66	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.2	66.8	64.1	71.3	71.7
Medium Trucks:	68.8	68.1	65.1	64.2	71.3	71.5
Heavy Trucks:	68.3	66.8	62.2	66.0	72.5	72.6
Vehicle Noise:	73.5	72.5	69.9	69.6	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	173	373	804	1,732
CNEL:	180	388	835	1,799

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: n/o Ramona Exwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,741 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,963 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.69	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.60	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.87	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	67.0	65.6	62.9	70.1	70.5
Medium Trucks:	67.5	66.8	63.9	63.0	70.1	70.3
Heavy Trucks:	67.1	65.6	61.0	64.8	71.3	71.4
Vehicle Noise:	72.3	71.3	68.6	68.4	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	144	310	668	1,439
CNEL:	149	322	694	1,495

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Harley Knox Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,867 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,040 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.43	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.70	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.2	65.8	63.0	70.3	70.7
Medium Trucks:	67.7	67.0	64.0	63.1	70.2	70.5
Heavy Trucks:	67.2	65.8	61.2	65.0	71.4	71.5
Vehicle Noise:	72.4	71.5	68.8	68.6	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	685	1,476
CNEL:	153	330	712	1,534

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Ramona Exwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,036 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,642 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.08	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-11.37	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.65	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.2	64.8	62.1	69.3	69.7
Medium Trucks:	66.8	66.1	63.1	62.2	69.3	69.6
Heavy Trucks:	66.3	64.8	60.2	64.0	70.5	70.6
Vehicle Noise:	71.5	70.5	67.9	67.6	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	593	1,277
CNEL:	133	286	616	1,327

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,640 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,751 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.20	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-11.09	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.37	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.5	65.1	62.4	69.6	70.0
Medium Trucks:	67.1	66.3	63.4	62.5	69.6	69.8
Heavy Trucks:	66.6	65.1	60.5	64.3	70.8	70.9
Vehicle Noise:	71.8	70.8	68.2	67.9	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,334
CNEL:	139	298	643	1,385

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Redlands Av. | Job Number: 11559
Road Segment: s/o Harley Knox Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,829 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	330 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.54	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-17.83	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.10	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.6	58.2	55.5	62.7	63.1
Medium Trucks:	60.4	59.7	56.7	55.8	62.9	63.2
Heavy Trucks:	60.4	58.9	54.3	58.1	64.6	64.7
Vehicle Noise:	65.2	64.2	61.5	61.4	68.3	68.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	167	360
CNEL:	37	80	173	373

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Rider St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,553 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,882 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.51	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.78	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.05	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.8	65.4	62.7	69.9	70.3
Medium Trucks:	67.4	66.7	63.7	62.8	69.9	70.2
Heavy Trucks:	66.9	65.4	60.8	64.6	71.1	71.2
Vehicle Noise:	72.1	71.1	68.5	68.2	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	301	649	1,399
CNEL:	145	313	675	1,453

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Redlands Av. | Job Number: 11559
Road Segment: s/o Markham St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,338 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	365 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.11	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-17.40	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-22.67	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.9	60.1	58.6	55.9	63.1	63.5
Medium Trucks:	60.8	60.1	57.2	56.3	63.4	63.6
Heavy Trucks:	60.8	59.4	54.8	58.6	65.0	65.1
Vehicle Noise:	65.6	64.6	61.9	61.9	68.7	68.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	40	86	185	399

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Redlands Av.
Road Segment: s/o Ramona Exwy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,882 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	129 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.64	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-21.92	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-27.20	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.5	54.1	51.4	58.6	59.0
Medium Trucks:	56.3	55.6	52.6	51.7	58.8	59.1
Heavy Trucks:	56.3	54.8	50.2	54.1	60.5	60.6
Vehicle Noise:	61.1	60.1	57.4	57.3	64.2	64.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	20	43	92	199

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Harley Knox Bl.
Road Segment: e/o Western Wy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,457 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,397 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.78	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-12.07	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.35	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.5	64.1	61.4	68.6	69.0
Medium Trucks:	66.1	65.4	62.4	61.5	68.6	68.9
Heavy Trucks:	65.6	64.1	59.5	63.3	69.8	69.9
Vehicle Noise:	70.8	69.8	67.2	66.9	73.8	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,147
CNEL:	119	257	553	1,192

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Redlands Av.
Road Segment: s/o Rider St.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,872 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	264 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.50	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-18.79	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-24.06	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.7	57.3	54.5	61.7	62.1
Medium Trucks:	59.4	58.7	55.8	54.9	62.0	62.2
Heavy Trucks:	59.4	58.0	53.4	57.2	63.6	63.7
Vehicle Noise:	64.2	63.2	60.5	60.5	67.3	67.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	32	69	149	322

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Harley Knox Bl.
Road Segment: e/o Patterson Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,343 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,253 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.26	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-12.55	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.82	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	65.1	63.6	60.9	68.1	68.5
Medium Trucks:	65.6	64.9	61.9	61.0	68.1	68.4
Heavy Trucks:	65.1	63.6	59.0	62.9	69.3	69.4
Vehicle Noise:	70.3	69.4	66.7	66.5	73.3	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	111	239	514	1,108

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Harley Knox Bl. | Job Number: 11559
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,217 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,176 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-12.82	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-18.10	-0.11	-1.20	*-5.31*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.8	63.4	60.6	67.9	68.3
Medium Trucks:	65.3	64.6	61.7	60.7	67.8	68.1
Heavy Trucks:	64.8	63.4	58.8	62.6	69.0	69.1
Vehicle Noise:	70.0	69.1	66.4	66.2	73.1	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	475	1,023
CNEL:	106	229	493	1,062

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Harley Knox Bl. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,906 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	335 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.99	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-18.27	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-23.55	-0.11	-1.20	*-5.31*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.3	57.9	55.2	62.4	62.8
Medium Trucks:	59.9	59.2	56.2	55.3	62.4	62.7
Heavy Trucks:	59.4	57.9	53.3	57.1	63.6	63.7
Vehicle Noise:	64.6	63.6	61.0	60.7	67.6	67.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	206	443
CNEL:	46	99	214	460

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Harley Knox Bl. | Job Number: 11559
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,660 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	728 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.07	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	81.00	-15.36	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-20.63	-0.11	-1.20	*-5.31*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	64.0	62.6	59.8	67.1	67.5
Medium Trucks:	64.3	63.6	60.7	59.8	66.9	67.1
Heavy Trucks:	63.4	62.0	57.4	61.2	67.6	67.7
Vehicle Noise:	69.0	68.1	65.5	65.1	72.0	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	865
CNEL:	90	194	418	900

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Markham St. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	679 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	46 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-14.48	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-25.77	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-31.04	1.71	-1.20	*-5.46*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.3	49.5	48.1	45.3	52.6	53.0
Medium Trucks:	50.5	49.8	46.8	45.9	53.0	53.3
Heavy Trucks:	51.0	49.6	44.9	48.8	55.2	55.3
Vehicle Noise:	55.4	54.4	51.6	51.7	58.5	58.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	81
CNEL:	8	18	39	84

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: w/o Nevada Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,711 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	3,122 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.04	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.31	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.6	66.1	63.4	70.6	71.0
Medium Trucks:	67.9	67.2	64.2	63.3	70.4	70.7
Heavy Trucks:	67.0	65.5	60.9	64.7	71.2	71.3
Vehicle Noise:	72.5	71.6	69.0	68.6	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	214	462	995	2,145
CNEL:	223	481	1,035	2,230

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,445 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,626 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.50	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.79	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.06	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.8	65.4	62.6	69.9	70.3
Medium Trucks:	67.1	66.4	63.5	62.6	69.6	69.9
Heavy Trucks:	66.2	64.8	60.1	64.0	70.4	70.5
Vehicle Noise:	71.8	70.9	68.3	67.9	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	191	412	887	1,911
CNEL:	199	428	922	1,987

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Nevada Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,502 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,903 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.35	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.63	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.2	65.8	63.1	70.3	70.7
Medium Trucks:	67.6	66.9	63.9	63.0	70.1	70.4
Heavy Trucks:	66.7	65.2	60.6	64.4	70.9	71.0
Vehicle Noise:	72.2	71.3	68.7	68.3	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	204	440	948	2,043
CNEL:	212	458	986	2,125

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,309 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,685 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.59	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.69	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.97	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.9	65.5	62.7	70.0	70.4
Medium Trucks:	67.2	66.5	63.6	62.6	69.7	70.0
Heavy Trucks:	66.3	64.8	60.2	64.1	70.5	70.6
Vehicle Noise:	71.9	71.0	68.4	68.0	74.9	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	900	1,939
CNEL:	202	435	936	2,017

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,282 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,410 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-2.89	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	81.00	-10.16	-2.88	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-15.44	-2.88	-1.20	*-5.18*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.4	65.0	62.3	69.5	69.9
Medium Trucks:	66.8	66.1	63.1	62.2	69.3	69.5
Heavy Trucks:	65.9	64.4	59.8	63.6	70.0	70.2
Vehicle Noise:	71.4	70.5	67.9	67.5	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	180	389	838	1,805
CNEL:	188	404	871	1,877

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,716 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,849 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.85	-2.89	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	81.00	-9.43	-2.88	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-14.71	-2.88	-1.20	*-5.18*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.2	65.7	63.0	70.2	70.6
Medium Trucks:	67.5	66.8	63.8	62.9	70.0	70.3
Heavy Trucks:	66.6	65.1	60.5	64.3	70.8	70.9
Vehicle Noise:	72.2	71.2	68.6	68.2	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	435	937	2,018
CNEL:	210	452	974	2,098

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,257 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,545 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.36	-2.89	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	81.00	-9.93	-2.88	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-15.20	-2.88	-1.20	*-5.18*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.7	65.2	62.5	69.7	70.1
Medium Trucks:	67.0	66.3	63.3	62.4	69.5	69.8
Heavy Trucks:	66.1	64.6	60.0	63.8	70.3	70.4
Vehicle Noise:	71.7	70.7	68.1	67.7	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	187	403	869	1,871
CNEL:	195	419	903	1,946

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Morgan St. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,311 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	90 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-12.21	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	77.72	-23.49	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-28.77	1.71	-1.20	*-5.46*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.8	54.0	52.5	49.8	57.0	57.4
Medium Trucks:	54.7	54.0	51.1	50.2	57.3	57.5
Heavy Trucks:	54.7	53.3	48.7	52.5	58.9	59.0
Vehicle Noise:	59.5	58.5	55.8	55.8	62.6	62.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	32	70	151
CNEL:	16	34	73	156

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Rider St. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,357 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	844 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.97	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-14.26	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.54	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.2	63.7	61.0	68.2	68.6
Medium Trucks:	65.7	65.0	62.0	61.1	68.2	68.5
Heavy Trucks:	65.2	63.7	59.1	63.0	69.4	69.5
Vehicle Noise:	70.4	69.4	66.8	66.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	83	178	383	826

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Rider St. | Job Number: 11559
Road Segment: e/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,258 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,042 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.06	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-13.35	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.62	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	66.1	64.6	61.9	69.1	69.5
Medium Trucks:	66.6	65.9	63.0	62.0	69.1	69.4
Heavy Trucks:	66.1	64.7	60.1	63.9	70.3	70.4
Vehicle Noise:	71.3	70.4	67.7	67.5	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	95	205	441	951

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Rider 2 & 4
Road Name: Rider St. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,392 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	846 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.96	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-14.25	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.52	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.2	63.7	61.0	68.2	68.6
Medium Trucks:	65.7	65.0	62.0	61.1	68.2	68.5
Heavy Trucks:	65.2	63.8	59.2	63.0	69.4	69.5
Vehicle Noise:	70.4	69.5	66.8	66.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	797
CNEL:	83	178	384	828

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: n/o Harley Knox Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,066 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,600 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.23%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.91	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-9.39	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.66	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.2	66.8	64.1	71.3	71.7
Medium Trucks:	68.8	68.1	65.1	64.2	71.3	71.5
Heavy Trucks:	68.3	66.8	62.2	66.0	72.5	72.6
Vehicle Noise:	73.5	72.5	69.9	69.6	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	173	373	804	1,733
CNEL:	180	388	836	1,800

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Perris Bl.
Road Segment: s/o Harley Knox Bl.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,982 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,048 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.24%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.88	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.43	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.70	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.2	65.8	63.0	70.3	70.7
Medium Trucks:	67.7	67.0	64.0	63.1	70.2	70.5
Heavy Trucks:	67.2	65.8	61.2	65.0	71.4	71.5
Vehicle Noise:	72.4	71.5	68.8	68.6	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	686	1,478
CNEL:	154	331	712	1,535

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Perris Bl.
Road Segment: s/o Ramona Exwy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,456 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,670 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.36%
Medium Trucks:	69.8%	8.8%	21.4%	6.66%
Heavy Trucks:	58.3%	5.1%	36.6%	1.98%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.00	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-11.37	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.65	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.3	64.9	62.2	69.4	69.8
Medium Trucks:	66.8	66.1	63.1	62.2	69.3	69.6
Heavy Trucks:	66.3	64.8	60.2	64.0	70.5	70.6
Vehicle Noise:	71.5	70.6	67.9	67.7	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	595	1,282
CNEL:	133	287	618	1,332

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Perris Bl.
Road Segment: n/o Ramona Exwy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,856 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,971 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.24%
Medium Trucks:	69.8%	8.8%	21.4%	6.75%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.71	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.60	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.87	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	67.0	65.6	62.9	70.1	70.5
Medium Trucks:	67.5	66.8	63.9	63.0	70.1	70.3
Heavy Trucks:	67.1	65.6	61.0	64.8	71.3	71.4
Vehicle Noise:	72.3	71.3	68.7	68.4	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	144	310	669	1,440
CNEL:	150	322	695	1,496

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Perris Bl.
Road Segment: s/o Morgan St.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,869 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,767 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.28%
Medium Trucks:	69.8%	8.8%	21.4%	6.72%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.24	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-11.09	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.37	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.6	65.1	62.4	69.6	70.0
Medium Trucks:	67.1	66.3	63.4	62.5	69.6	69.8
Heavy Trucks:	66.6	65.1	60.5	64.3	70.8	70.9
Vehicle Noise:	71.8	70.8	68.2	67.9	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	620	1,336
CNEL:	139	299	644	1,388

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Perris Bl.
Road Segment: s/o Rider St.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,668 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,890 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.24%
Medium Trucks:	69.8%	8.8%	21.4%	6.75%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.53	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.78	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.05	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.9	65.4	62.7	69.9	70.3
Medium Trucks:	67.4	66.7	63.7	62.8	69.9	70.2
Heavy Trucks:	66.9	65.4	60.8	64.6	71.1	71.2
Vehicle Noise:	72.1	71.1	68.5	68.2	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	650	1,400
CNEL:	145	313	675	1,455

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Redlands Av.
Road Segment: s/o Markham St.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,702 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	389 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	85.38%
Medium Trucks:	69.8%	8.8%	21.4%	8.75%
Heavy Trucks:	58.3%	5.1%	36.6%	5.87%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.11	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-16.00	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.74	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.9	60.1	58.6	55.9	63.1	63.5
Medium Trucks:	62.2	61.5	58.6	57.7	64.7	65.0
Heavy Trucks:	65.8	64.3	59.7	63.5	69.9	70.1
Vehicle Noise:	68.2	67.1	63.8	65.1	71.7	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	614
CNEL:	63	136	293	631

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Redlands Av.
Road Segment: s/o Harley Knox Bl.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,193 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	355 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	84.81%
Medium Trucks:	69.8%	8.8%	21.4%	8.94%
Heavy Trucks:	58.3%	5.1%	36.6%	6.24%

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:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.54	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-16.31	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.87	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.6	58.2	55.5	62.7	63.1
Medium Trucks:	61.9	61.2	58.2	57.3	64.4	64.7
Heavy Trucks:	65.6	64.1	59.5	63.4	69.8	69.9
Vehicle Noise:	68.0	66.9	63.5	64.9	71.5	71.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	61	132	284	611

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Redlands Av.
Road Segment: s/o Ramona Exwy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,437 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	166 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	78.27%
Medium Trucks:	69.8%	8.8%	21.4%	10.86%
Heavy Trucks:	58.3%	5.1%	36.6%	10.87%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.18	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-18.76	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.75	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	56.0	54.6	51.8	59.1	59.5
Medium Trucks:	59.5	58.8	55.8	54.9	62.0	62.3
Heavy Trucks:	64.8	63.3	58.7	62.5	68.9	69.0
Vehicle Noise:	66.4	65.2	61.5	63.5	70.1	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	477
CNEL:	49	105	227	488

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Redlands Av.
Road Segment: s/o Rider St.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,910 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	267 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.29%
Medium Trucks:	69.8%	8.8%	21.4%	6.71%
Heavy Trucks:	58.3%	5.1%	36.6%	1.99%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.46	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-18.79	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-24.06	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.7	57.3	54.6	61.8	62.2
Medium Trucks:	59.4	58.7	55.8	54.9	62.0	62.2
Heavy Trucks:	59.4	58.0	53.4	57.2	63.6	63.7
Vehicle Noise:	64.2	63.3	60.5	60.5	67.3	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	32	70	150	323

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Harley Knox Bl.
Road Segment: e/o Patterson Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,707 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,278 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	89.43%
Medium Trucks:	69.8%	8.8%	21.4%	7.38%
Heavy Trucks:	58.3%	5.1%	36.6%	3.19%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.26	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-12.09	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.74	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	65.1	63.6	60.9	68.1	68.5
Medium Trucks:	66.0	65.3	62.4	61.5	68.6	68.8
Heavy Trucks:	67.2	65.7	61.1	65.0	71.4	71.5
Vehicle Noise:	71.2	70.2	67.3	67.6	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	270	583	1,255
CNEL:	130	280	603	1,299

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Harley Knox Bl.
Road Segment: e/o Western Wy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,821 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,422 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	89.61%
Medium Trucks:	69.8%	8.8%	21.4%	7.32%
Heavy Trucks:	58.3%	5.1%	36.6%	3.07%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.78	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-11.66	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.44	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.5	64.1	61.4	68.6	69.0
Medium Trucks:	66.5	65.8	62.8	61.9	69.0	69.3
Heavy Trucks:	67.5	66.0	61.4	65.3	71.7	71.8
Vehicle Noise:	71.6	70.6	67.7	68.0	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	617	1,330
CNEL:	138	297	639	1,377

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Harley Knox Bl.
Road Segment: e/o Webster Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,581 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,201 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	89.32%
Medium Trucks:	69.8%	8.8%	21.4%	7.42%
Heavy Trucks:	58.3%	5.1%	36.6%	3.26%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-12.34	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.91	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.8	63.4	60.6	67.9	68.3
Medium Trucks:	65.8	65.1	62.1	61.2	68.3	68.6
Heavy Trucks:	67.0	65.6	61.0	64.8	71.2	71.3
Vehicle Noise:	71.0	69.9	67.0	67.4	74.2	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,215
CNEL:	126	271	583	1,257

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Harley Knox Bl. | Job Number: 11559
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,024 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	753 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	88.19%
Medium Trucks:	69.8%	8.8%	21.4%	7.80%
Heavy Trucks:	58.3%	5.1%	36.6%	4.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.07	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-14.61	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-17.50	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	64.0	62.6	59.8	67.1	67.5
Medium Trucks:	65.1	64.4	61.4	60.5	67.6	67.9
Heavy Trucks:	66.6	65.1	60.5	64.3	70.8	70.9
Vehicle Noise:	70.3	69.3	66.3	66.8	73.6	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	514	1,107
CNEL:	114	247	531	1,144

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Markham St. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	679 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	46 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-14.48	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-25.77	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-31.04	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.3	49.5	48.1	45.3	52.6	53.0
Medium Trucks:	50.5	49.8	46.8	45.9	53.0	53.3
Heavy Trucks:	51.0	49.6	44.9	48.8	55.2	55.3
Vehicle Noise:	55.4	54.4	51.6	51.7	58.5	58.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	81
CNEL:	8	18	39	84

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Harley Knox Bl. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,270 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	360 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	84.91%
Medium Trucks:	69.8%	8.8%	21.4%	8.91%
Heavy Trucks:	58.3%	5.1%	36.6%	6.18%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.99	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-16.78	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-18.36	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.3	57.9	55.2	62.4	62.8
Medium Trucks:	61.4	60.7	57.7	56.8	63.9	64.2
Heavy Trucks:	64.6	63.1	58.5	62.3	68.8	68.9
Vehicle Noise:	67.2	66.1	62.8	64.0	70.7	70.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	711
CNEL:	73	158	340	732

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: w/o Nevada Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,093 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	3,148 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.28%
Medium Trucks:	69.8%	8.8%	21.4%	6.72%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.29	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.04	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.31	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.6	66.2	63.4	70.7	71.1
Medium Trucks:	67.9	67.2	64.2	63.3	70.4	70.7
Heavy Trucks:	67.0	65.5	60.9	64.7	71.2	71.3
Vehicle Noise:	72.6	71.6	69.0	68.6	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	215	463	997	2,149
CNEL:	223	482	1,037	2,235

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Nevada Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,884 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,929 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.28%
Medium Trucks:	69.8%	8.8%	21.4%	6.72%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.98	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.35	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.63	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.3	65.9	63.1	70.4	70.7
Medium Trucks:	67.6	66.9	63.9	63.0	70.1	70.4
Heavy Trucks:	66.7	65.2	60.6	64.4	70.9	71.0
Vehicle Noise:	72.2	71.3	68.7	68.3	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	205	441	950	2,047
CNEL:	213	459	988	2,129

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,691 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,711 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.29%
Medium Trucks:	69.8%	8.8%	21.4%	6.72%
Heavy Trucks:	58.3%	5.1%	36.6%	1.99%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.64	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.69	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.97	-2.88	-1.20	-5.18	0.000	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	67.0	65.5	62.8	70.0	70.4
Medium Trucks:	67.2	66.5	63.6	62.6	69.7	70.0
Heavy Trucks:	66.3	64.8	60.2	64.1	70.5	70.6
Vehicle Noise:	71.9	71.0	68.4	68.0	74.9	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	419	902	1,944
CNEL:	202	436	938	2,022

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,827 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,652 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.29%
Medium Trucks:	69.8%	8.8%	21.4%	6.71%
Heavy Trucks:	58.3%	5.1%	36.6%	1.99%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.54	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.79	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.06	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.9	65.4	62.7	69.9	70.3
Medium Trucks:	67.1	66.4	63.5	62.6	69.6	69.9
Heavy Trucks:	66.2	64.8	60.1	64.0	70.4	70.5
Vehicle Noise:	71.8	70.9	68.3	67.9	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	413	889	1,915
CNEL:	199	429	925	1,992

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,358 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,415 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.23%
Medium Trucks:	69.8%	8.8%	21.4%	6.77%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-10.16	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.44	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.4	65.0	62.3	69.5	69.9
Medium Trucks:	66.8	66.1	63.1	62.2	69.3	69.5
Heavy Trucks:	65.9	64.4	59.8	63.6	70.0	70.2
Vehicle Noise:	71.4	70.5	67.9	67.5	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	181	389	838	1,806
CNEL:	188	405	872	1,878

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Ramona Exwy.
Road Segment: w/o Redlands Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,333 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,550 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	68.2%	12.3%	19.6%	91.22%
Medium Trucks:	69.8%	8.8%	21.4%	6.77%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	1.37	-2.89	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	81.00	-9.93	-2.88	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-15.20	-2.88	-1.20	*-5.18*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.5	66.7	65.3	62.5	69.7	70.1
Medium Trucks:	67.0	66.3	63.3	62.4	69.5	69.8
Heavy Trucks:	66.1	64.6	60.0	63.8	70.3	70.4
Vehicle Noise:	71.7	70.7	68.1	67.7	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	187	403	869	1,872
CNEL:	195	419	904	1,947

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Morgan St.
Road Segment: e/o Perris Bl.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,502 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	103 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	68.2%	12.3%	19.6%	92.32%
Medium Trucks:	69.8%	8.8%	21.4%	5.92%
Heavy Trucks:	58.3%	5.1%	36.6%	1.76%

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:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-11.56	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	77.72	-23.49	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-28.77	1.71	-1.20	*-5.46*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	55.4	54.6	53.2	50.4	57.7	58.1
Medium Trucks:	54.7	54.0	51.1	50.2	57.3	57.5
Heavy Trucks:	54.7	53.3	48.7	52.5	58.9	59.0
Vehicle Noise:	59.7	58.8	56.1	55.9	62.8	63.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	33	72	155
CNEL:	16	35	75	161

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Ramona Exwy.
Road Segment: e/o Redlands Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,831 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,857 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	68.2%	12.3%	19.6%	91.23%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	1.87	-2.89	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	81.00	-9.43	-2.88	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-14.71	-2.88	-1.20	*-5.18*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.0	67.2	65.7	63.0	70.2	70.6
Medium Trucks:	67.5	66.8	63.8	62.9	70.0	70.3
Heavy Trucks:	66.6	65.1	60.5	64.3	70.8	70.9
Vehicle Noise:	72.2	71.2	68.6	68.2	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	202	435	937	2,019
CNEL:	210	452	975	2,100

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Rider St.
Road Segment: e/o Perris Bl.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,701 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	867 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	68.2%	12.3%	19.6%	91.44%
Medium Trucks:	69.8%	8.8%	21.4%	6.60%
Heavy Trucks:	58.3%	5.1%	36.6%	1.96%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-2.84	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-14.26	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-19.54	1.71	-1.20	*-5.46*	0.000	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	65.3	63.9	61.1	68.4	68.8
Medium Trucks:	65.7	65.0	62.0	61.1	68.2	68.5
Heavy Trucks:	65.2	63.7	59.1	63.0	69.4	69.5
Vehicle Noise:	70.5	69.5	66.9	66.6	73.5	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	80	172	371	800
CNEL:	83	179	386	831

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Rider St. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,736 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	870 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.44%
Medium Trucks:	69.8%	8.8%	21.4%	6.60%
Heavy Trucks:	58.3%	5.1%	36.6%	1.96%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.83	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-14.25	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.52	1.71	-1.20	-5.46	0.000	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	65.3	63.9	61.1	68.4	68.8
Medium Trucks:	65.7	65.0	62.0	61.1	68.2	68.5
Heavy Trucks:	65.2	63.8	59.2	63.0	69.4	69.5
Vehicle Noise:	70.5	69.5	66.9	66.6	73.5	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	372	802
CNEL:	83	179	387	833

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: n/o Harley Knox Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,426 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,966 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.23%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.49	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-8.81	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.09	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.8	67.4	64.6	71.9	72.3
Medium Trucks:	69.3	68.6	65.7	64.8	71.8	72.1
Heavy Trucks:	68.9	67.4	62.8	66.6	73.0	73.1
Vehicle Noise:	74.0	73.1	70.4	70.2	77.1	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	189	408	878	1,893
CNEL:	197	424	913	1,966

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Rider 2 & 4
Road Name: Rider St. | Job Number: 11559
Road Segment: e/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,525 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,060 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.36%
Medium Trucks:	69.8%	8.8%	21.4%	6.66%
Heavy Trucks:	58.3%	5.1%	36.6%	1.98%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.98	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-13.35	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.62	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.2	64.7	62.0	69.2	69.6
Medium Trucks:	66.6	65.9	63.0	62.0	69.1	69.4
Heavy Trucks:	66.1	64.7	60.1	63.9	70.3	70.4
Vehicle Noise:	71.4	70.4	67.7	67.5	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	95	206	443	954

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Harley Knox Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,563 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,292 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.24%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.37	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-9.94	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.21	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.7	66.3	63.5	70.8	71.2
Medium Trucks:	68.2	67.5	64.5	63.6	70.7	71.0
Heavy Trucks:	67.7	66.3	61.7	65.5	71.9	72.0
Vehicle Noise:	72.9	72.0	69.3	69.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	740	1,593
CNEL:	166	357	768	1,655

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: n/o Ramona Exwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,798 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,240 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.24%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.27	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.04	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.31	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.6	66.2	63.4	70.7	71.1
Medium Trucks:	68.1	67.4	64.4	63.5	70.6	70.9
Heavy Trucks:	67.6	66.2	61.6	65.4	71.8	71.9
Vehicle Noise:	72.8	71.9	69.2	69.0	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	157	338	728	1,569
CNEL:	163	351	757	1,630

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,827 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,105 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.27%
Medium Trucks:	69.8%	8.8%	21.4%	6.73%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.00	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.32	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.60	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.3	65.9	63.2	70.4	70.8
Medium Trucks:	67.8	67.1	64.2	63.2	70.3	70.6
Heavy Trucks:	67.3	65.9	61.3	65.1	71.5	71.6
Vehicle Noise:	72.5	71.6	68.9	68.7	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	150	324	698	1,503
CNEL:	156	336	725	1,561

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Ramona Exwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,820 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,037 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.33%
Medium Trucks:	69.8%	8.8%	21.4%	6.69%
Heavy Trucks:	58.3%	5.1%	36.6%	1.98%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.50	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.77	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.2	65.8	63.0	70.3	70.7
Medium Trucks:	67.6	66.9	64.0	63.1	70.2	70.4
Heavy Trucks:	67.2	65.7	61.1	64.9	71.4	71.5
Vehicle Noise:	72.4	71.4	68.8	68.5	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	147	316	680	1,466
CNEL:	152	328	707	1,523

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Perris Bl. | Job Number: 11559
Road Segment: s/o Rider St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,815 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,173 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.24%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.13	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.17	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.44	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.5	66.0	63.3	70.5	70.9
Medium Trucks:	68.0	67.3	64.3	63.4	70.5	70.8
Heavy Trucks:	67.5	66.0	61.4	65.3	71.7	71.8
Vehicle Noise:	72.7	71.7	69.1	68.8	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	154	331	714	1,537
CNEL:	160	344	741	1,597

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Redlands Av.
Road Segment: s/o Harley Knox Bl.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,781 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	600 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	87.43%
Medium Trucks:	69.8%	8.8%	21.4%	8.06%
Heavy Trucks:	58.3%	5.1%	36.6%	4.51%

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:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.13	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-14.48	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.00	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	62.1	60.6	57.9	65.1	65.5
Medium Trucks:	63.7	63.0	60.1	59.2	66.3	66.5
Heavy Trucks:	66.5	65.0	60.4	64.3	70.7	70.8
Vehicle Noise:	69.4	68.3	65.2	66.1	72.8	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	156	337	726
CNEL:	75	161	347	748

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Redlands Av.
Road Segment: s/o Ramona Exwy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,930 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	337 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	84.81%
Medium Trucks:	69.8%	8.8%	21.4%	8.80%
Heavy Trucks:	58.3%	5.1%	36.6%	6.39%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.77	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-16.61	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.00	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.4	58.0	55.2	62.5	62.9
Medium Trucks:	61.6	60.9	58.0	57.0	64.1	64.4
Heavy Trucks:	65.5	64.0	59.4	63.3	69.7	69.8
Vehicle Noise:	67.8	66.7	63.3	64.7	71.4	71.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	60	128	276	595

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Redlands Av.
Road Segment: s/o Markham St.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,321 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	637 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	87.64%
Medium Trucks:	69.8%	8.8%	21.4%	7.99%
Heavy Trucks:	58.3%	5.1%	36.6%	4.37%

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:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.86	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-14.26	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.88	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.3	60.9	58.2	65.4	65.8
Medium Trucks:	64.0	63.3	60.3	59.4	66.5	66.8
Heavy Trucks:	66.6	65.1	60.5	64.4	70.8	70.9
Vehicle Noise:	69.6	68.5	65.4	66.3	73.0	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	346	745
CNEL:	77	165	356	768

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Redlands Av.
Road Segment: s/o Rider St.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,218 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	288 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.29%
Medium Trucks:	69.8%	8.8%	21.4%	6.72%
Heavy Trucks:	58.3%	5.1%	36.6%	1.99%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.13	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-18.46	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.73	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	59.1	57.6	54.9	62.1	62.5
Medium Trucks:	59.8	59.1	56.1	55.2	62.3	62.6
Heavy Trucks:	59.8	58.3	53.7	57.5	64.0	64.1
Vehicle Noise:	64.6	63.6	60.9	60.8	67.6	67.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	327
CNEL:	34	73	158	340

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Harley Knox Bl.
Road Segment: e/o Western Wy.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,720 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,303 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	90.22%
Medium Trucks:	69.8%	8.8%	21.4%	7.11%
Heavy Trucks:	58.3%	5.1%	36.6%	2.66%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.34	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-9.69	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.96	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.7	66.2	63.5	70.7	71.1
Medium Trucks:	68.4	67.7	64.8	63.9	71.0	71.2
Heavy Trucks:	69.0	67.5	62.9	66.7	73.2	73.3
Vehicle Noise:	73.4	72.4	69.6	69.7	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	175	376	811	1,747
CNEL:	181	390	840	1,810

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Harley Knox Bl.
Road Segment: e/o Webster Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,306 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,797 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	89.94%
Medium Trucks:	69.8%	8.8%	21.4%	7.21%
Heavy Trucks:	58.3%	5.1%	36.6%	2.85%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.25	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.71	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.75	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.6	65.1	62.4	69.6	70.0
Medium Trucks:	67.4	66.7	63.8	62.9	69.9	70.2
Heavy Trucks:	68.2	66.7	62.1	65.9	72.4	72.5
Vehicle Noise:	72.5	71.4	68.6	68.8	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	151	326	703	1,514
CNEL:	157	338	728	1,568

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Harley Knox Bl.
Road Segment: e/o Patterson Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,942 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,113 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	90.13%
Medium Trucks:	69.8%	8.8%	21.4%	7.14%
Heavy Trucks:	58.3%	5.1%	36.6%	2.72%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.96	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-10.05	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.24	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.3	65.9	63.1	70.4	70.8
Medium Trucks:	68.1	67.4	64.4	63.5	70.6	70.9
Heavy Trucks:	68.7	67.2	62.6	66.5	72.9	73.0
Vehicle Noise:	73.1	72.1	69.3	69.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	166	358	771	1,661
CNEL:	172	371	799	1,721

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Harley Knox Bl.
Road Segment: e/o Indian Av.
Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,500 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,059 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	89.06%
Medium Trucks:	69.8%	8.8%	21.4%	7.51%
Heavy Trucks:	58.3%	5.1%	36.6%	3.43%

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:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.55	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-13.29	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.69	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.5	64.1	61.4	68.6	69.0
Medium Trucks:	66.4	65.7	62.7	61.8	68.9	69.2
Heavy Trucks:	67.4	65.9	61.3	65.1	71.6	71.7
Vehicle Noise:	71.5	70.5	67.6	67.9	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	609	1,312
CNEL:	136	293	630	1,358

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Harley Knox Bl. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,989 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	614 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	64.0 feet
Centerline Dist. to Observer:	64.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	87.51%
Medium Trucks:	69.8%	8.8%	21.4%	8.03%
Heavy Trucks:	58.3%	5.1%	36.6%	4.46%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
Medium Trucks:	50.033
Heavy Trucks:	50.050

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.54	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-14.91	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.47	-0.11	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.8	60.4	57.6	64.9	65.3
Medium Trucks:	63.2	62.5	59.6	58.7	65.8	66.0
Heavy Trucks:	65.5	64.0	59.4	63.2	69.7	69.8
Vehicle Noise:	68.7	67.6	64.6	65.3	72.1	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	408	878
CNEL:	91	195	421	906

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: w/o Nevada Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	58,786 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	4,015 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.26%
Medium Trucks:	69.8%	8.8%	21.4%	6.74%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.97	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.25	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.7	67.2	64.5	71.7	72.1
Medium Trucks:	68.9	68.2	65.3	64.4	71.5	71.7
Heavy Trucks:	68.0	66.6	62.0	65.8	72.2	72.3
Vehicle Noise:	73.6	72.7	70.1	69.7	76.6	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	253	545	1,174	2,529
CNEL:	263	567	1,221	2,630

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Markham St. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	720 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	49 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.21%
Medium Trucks:	69.8%	8.8%	21.4%	6.78%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-14.23	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-25.52	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-30.79	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.5	49.7	48.3	45.6	52.8	53.2
Medium Trucks:	50.7	50.0	47.1	46.2	53.3	53.5
Heavy Trucks:	51.3	49.8	45.2	49.0	55.5	55.6
Vehicle Noise:	55.6	54.6	51.8	52.0	58.8	59.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	39	84
CNEL:	9	19	40	87

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Nevada Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,382 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	3,783 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.27%
Medium Trucks:	69.8%	8.8%	21.4%	6.73%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.09	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-8.23	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.51	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.4	67.0	64.2	71.5	71.9
Medium Trucks:	68.7	68.0	65.0	64.1	71.2	71.5
Heavy Trucks:	67.8	66.3	61.7	65.5	72.0	72.1
Vehicle Noise:	73.4	72.4	69.8	69.4	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	524	1,128	2,430
CNEL:	253	545	1,173	2,527

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,463 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	3,447 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.27%
Medium Trucks:	69.8%	8.8%	21.4%	6.73%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.68	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-8.64	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.92	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	68.0	66.6	63.8	71.1	71.5
Medium Trucks:	68.3	67.6	64.6	63.7	70.8	71.1
Heavy Trucks:	67.4	65.9	61.3	65.1	71.6	71.7
Vehicle Noise:	73.0	72.0	69.4	69.0	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	228	492	1,060	2,283
CNEL:	237	512	1,102	2,375

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,170 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	3,017 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.22%
Medium Trucks:	69.8%	8.8%	21.4%	6.77%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.10	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.19	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.47	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.4	66.0	63.2	70.5	70.9
Medium Trucks:	67.7	67.0	64.1	63.1	70.2	70.5
Heavy Trucks:	66.8	65.3	60.7	64.6	71.0	71.1
Vehicle Noise:	72.4	71.5	68.9	68.5	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	209	451	972	2,095
CNEL:	218	469	1,011	2,178

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,028 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	3,349 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.27%
Medium Trucks:	69.8%	8.8%	21.4%	6.73%
Heavy Trucks:	58.3%	5.1%	36.6%	2.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.56	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-8.77	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.04	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.9	66.4	63.7	70.9	71.3
Medium Trucks:	68.1	67.4	64.5	63.6	70.7	70.9
Heavy Trucks:	67.3	65.8	61.2	65.0	71.4	71.5
Vehicle Noise:	72.8	71.9	69.3	68.9	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	224	483	1,040	2,240
CNEL:	233	502	1,081	2,329

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,826 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	2,788 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.22%
Medium Trucks:	69.8%	8.8%	21.4%	6.77%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.76	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.54	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.81	-2.88	-1.20	-5.18	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	67.1	65.6	62.9	70.1	70.5
Medium Trucks:	67.4	66.7	63.7	62.8	69.9	70.2
Heavy Trucks:	66.5	65.0	60.4	64.2	70.7	70.8
Vehicle Noise:	72.1	71.1	68.5	68.1	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,987
CNEL:	207	445	959	2,067

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Ramona Exwy. | Job Number: 11559
Road Segment: e/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,476 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	3,106 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	102 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	92.0 feet
Centerline Dist. to Observer:	92.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.23%
Medium Trucks:	69.8%	8.8%	21.4%	6.76%
Heavy Trucks:	58.3%	5.1%	36.6%	2.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	76.733
Medium Trucks:	76.618
Heavy Trucks:	76.629

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.23	-2.89	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-9.07	-2.88	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.35	-2.88	-1.20	-5.18	0.000	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	67.5	66.1	63.4	70.6	71.0
Medium Trucks:	67.8	67.1	64.2	63.3	70.4	70.6
Heavy Trucks:	66.9	65.5	60.9	64.7	71.1	71.2
Vehicle Noise:	72.5	71.6	69.0	68.6	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	214	460	991	2,135
CNEL:	222	478	1,031	2,220

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Rider St. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,619 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,135 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.39%
Medium Trucks:	69.8%	8.8%	21.4%	6.64%
Heavy Trucks:	58.3%	5.1%	36.6%	1.97%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.68	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-13.07	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.34	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.5	65.0	62.3	69.5	69.9
Medium Trucks:	66.9	66.2	63.2	62.3	69.4	69.7
Heavy Trucks:	66.4	64.9	60.3	64.2	70.6	70.7
Vehicle Noise:	71.6	70.7	68.0	67.8	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	960
CNEL:	100	215	463	997

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Morgan St. | Job Number: 11559
Road Segment: e/o Perris Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,797 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	123 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	92.14%
Medium Trucks:	69.8%	8.8%	21.4%	6.06%
Heavy Trucks:	58.3%	5.1%	36.6%	1.80%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.79	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-22.61	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-27.89	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.2	55.4	54.0	51.2	58.5	58.9
Medium Trucks:	55.6	54.9	52.0	51.0	58.1	58.4
Heavy Trucks:	55.6	54.1	49.5	53.4	59.8	59.9
Vehicle Noise:	60.6	59.6	57.0	56.8	63.6	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	177
CNEL:	18	40	85	184

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project | Project Name: Rider 2 & 4
Road Name: Rider St. | Job Number: 11559
Road Segment: w/o Redlands Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,656 vehicles
Peak Hour Percentage:	6.83%
Peak Hour Volume:	1,138 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	56 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	47.0 feet
Centerline Dist. to Observer:	47.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	68.2%	12.3%	19.6%	91.39%
Medium Trucks:	69.8%	8.8%	21.4%	6.64%
Heavy Trucks:	58.3%	5.1%	36.6%	1.97%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.67	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-13.06	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.33	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.5	65.0	62.3	69.5	69.9
Medium Trucks:	66.9	66.2	63.2	62.3	69.4	69.7
Heavy Trucks:	66.4	65.0	60.3	64.2	70.6	70.7
Vehicle Noise:	71.7	70.7	68.0	67.8	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	961
CNEL:	100	215	464	999

Monday, August 10, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: EAC With Project
Road Name: Rider St.
Road Segment: e/o Redlands Av.

Project Name: Rider 2 & 4
Job Number: 11559

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,394	vehicles
Peak Hour Percentage:	6.83%	
Peak Hour Volume:	1,256	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	56	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	47.0	feet
Centerline Dist. to Observer:	47.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	68.2%	12.3%	19.6%	91.33%
Medium Trucks:	69.8%	8.8%	21.4%	6.68%
Heavy Trucks:	58.3%	5.1%	36.6%	1.98%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.24	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-12.60	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.87	1.71	-1.20	*-5.46*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.7	66.9	65.5	62.7	70.0	70.4
Medium Trucks:	67.4	66.7	63.7	62.8	69.9	70.2
Heavy Trucks:	66.9	65.4	60.8	64.6	71.1	71.2
Vehicle Noise:	72.1	71.1	68.5	68.2	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	103	222	478	1,030
CNEL:	107	231	497	1,070

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APPENDIX 9.1:

OPERATIONAL STATIONARY-SOURCE NOISE CALCULATIONS

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11559 - IDI Rider 2 and 4

CadnaA Noise Prediction Model: 11559-31.cna
Date: 24.09.20
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	44.5	44.5	80.0	60.0				5.00	a	6267953.99	2251042.36	5.00
RECEIVERS		R2	53.7	53.7	80.0	60.0				5.00	a	6269521.47	2249726.46	5.00
RECEIVERS		R3	47.6	47.6	80.0	60.0				5.00	a	6270550.18	2249080.48	5.00
RECEIVERS		R4	53.0	52.9	80.0	60.0				5.00	a	6270531.57	2247228.86	5.00
RECEIVERS		R5	49.5	49.5	80.0	60.0				5.00	a	6270525.65	2246507.74	5.00
RECEIVERS		R6	55.7	55.7	80.0	60.0				5.00	a	6269079.12	2246723.03	5.00
RECEIVERS		R7	60.0	59.9	80.0	60.0				5.00	a	6268391.65	2247030.05	5.00
RECEIVERS		R8	44.5	44.5	80.0	60.0				5.00	a	6267528.08	2247205.43	5.00
RECEIVERS		BIO-1	57.9	57.9	80.0	60.0				5.00	a	6269722.31	2248681.98	5.00
RECEIVERS		BIO-2	55.4	55.4	80.0	60.0				5.00	a	6270123.36	2247308.43	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	0.0	5.00	g	6268278.36	2249525.05	50.00
POINTSOURCE		AC02	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	0.0	5.00	g	6268281.88	2248538.86	50.00
POINTSOURCE		AC03	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	0.0	5.00	g	6268170.96	2247302.88	50.00
POINTSOURCE		AC04	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	0.0	5.00	g	6269316.39	2247334.58	50.00
POINTSOURCE		TRASH01	102.8	102.8	102.8	Lw	102.8		75.00	0.00	45.00	0.0	5.00	a	6269139.22	2247119.65	5.00
POINTSOURCE		TRASH02	102.8	102.8	102.8	Lw	102.8		75.00	0.00	45.00	0.0	5.00	a	6268259.85	2247123.10	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH03	102.8	102.8	102.8	Lw	102.8		75.00	0.00	45.00	0.0	5.00	a	6268128.12	2249430.40	5.00
POINTSOURCE		TRASH04	102.8	102.8	102.8	Lw	102.8		75.00	0.00	45.00	0.0	5.00	a	6268112.78	2248626.32	5.00
POINTSOURCE		TRASH05	102.8	102.8	102.8	Lw	102.8		75.00	0.00	45.00	0.0	5.00	a	6268269.84	2248126.23	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
AREASOURCE		LOADING01	118.5	118.5	118.5	77.1	77.1	77.1	Lw	118.5					8
AREASOURCE		LOADING02	118.5	118.5	118.5	75.5	75.5	75.5	Lw	118.5					8
AREASOURCE		LOADING03	118.5	118.5	118.5	76.4	76.4	76.4	Lw	118.5					8
AREASOURCE		LOADING04	118.5	118.5	118.5	76.3	76.3	76.3	Lw	118.5					8
AREASOURCE		PARKING01	93.8	93.8	93.8	59.2	59.2	59.2	Lw	93.8					5
AREASOURCE		PARKING02	93.8	93.8	93.8	63.7	63.7	63.7	Lw	93.8					5
AREASOURCE		PARKING03	93.8	93.8	93.8	59.2	59.2	59.2	Lw	93.8					5
AREASOURCE		PARKING04	93.8	93.8	93.8	58.7	58.7	58.7	Lw	93.8					5
AREASOURCE		PARKING05	93.8	93.8	93.8	56.0	56.0	56.0	Lw	93.8					5
AREASOURCE		PARKING06	93.8	93.8	93.8	63.4	63.4	63.4	Lw	93.8					5

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a		6268118.50	2249443.41	8.00	0.00
				6268298.67	2249440.00	8.00	0.00
				6268288.47	2248603.40	8.00	0.00
				6268101.81	2248603.31	8.00	0.00
				6268111.25	2249240.28	8.00	0.00
				6268164.21	2249238.83	8.00	0.00
				6268167.11	2249338.94	8.00	0.00
				6268119.23	2249340.40	8.00	0.00
AREASOURCE	8.00	a		6268260.32	2247952.54	8.00	0.00
				6268256.35	2247990.05	8.00	0.00
				6268255.63	2248136.85	8.00	0.00
				6269414.90	2248131.09	8.00	0.00
				6269411.30	2247969.90	8.00	0.00
				6269419.94	2247948.32	8.00	0.00
				6269361.71	2247929.28	8.00	0.00
				6269361.81	2247947.14	8.00	0.00
AREASOURCE	8.00	a		6268253.21	2247262.13	8.00	0.00
				6268255.99	2247299.65	8.00	0.00
				6269230.02	2247295.41	8.00	0.00
				6269229.45	2247162.84	8.00	0.00
				6269149.10	2247162.84	8.00	0.00
				6269147.95	2247111.76	8.00	0.00
				6268252.64	2247114.63	8.00	0.00
AREASOURCE	8.00	a		6268808.79	2249543.15	8.00	0.00
				6268933.25	2249541.34	8.00	0.00
				6268929.67	2249233.10	8.00	0.00
				6268938.15	2249232.91	8.00	0.00
				6268934.57	2248921.09	8.00	0.00
				6268987.36	2248920.71	8.00	0.00
				6268981.51	2248390.01	8.00	0.00
				6268795.57	2248392.41	8.00	0.00
				6268796.32	2248486.64	8.00	0.00
AREASOURCE	5.00	a		6268292.17	2249619.11	5.00	0.00
				6268669.69	2249615.91	5.00	0.00
				6268670.15	2249597.17	5.00	0.00
				6268829.21	2249593.06	5.00	0.00
				6268829.21	2249548.27	5.00	0.00
				6268305.88	2249555.58	5.00	0.00
				6268306.79	2249574.32	5.00	0.00
				6268290.80	2249576.15	5.00	0.00
AREASOURCE	5.00	a		6268116.18	2248598.27	5.00	0.00
				6268180.61	2248597.46	5.00	0.00
				6268178.60	2248480.68	5.00	0.00
				6268176.99	2248434.77	5.00	0.00
				6268176.99	2248417.85	5.00	0.00
				6268114.57	2248417.85	5.00	0.00
				6268114.57	2248446.44	5.00	0.00
				6268133.09	2248446.44	5.00	0.00
				6268133.90	2248472.62	5.00	0.00
				6268115.37	2248472.62	5.00	0.00
AREASOURCE	5.00	a		6268242.23	2248444.43	5.00	0.00
				6268242.23	2248470.61	5.00	0.00
				6268278.47	2248469.40	5.00	0.00
				6268278.07	2248487.92	5.00	0.00

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
					6268324.79	2248487.92	5.00	0.00
					6268779.06	2248481.48	5.00	0.00
					6268782.68	2248437.99	5.00	0.00
					6268663.47	2248438.79	5.00	0.00
					6268661.86	2248421.07	5.00	0.00
					6268242.63	2248426.31	5.00	0.00
AREASOURCE	5.00	a			6268039.14	2247522.71	5.00	0.00
					6268081.18	2247511.00	5.00	0.00
					6268051.38	2247417.33	5.00	0.00
					6268069.47	2247409.88	5.00	0.00
					6268021.04	2247231.05	5.00	0.00
					6268020.16	2247223.77	5.00	0.00
					6268020.51	2247216.43	5.00	0.00
					6268022.09	2247209.27	5.00	0.00
					6268024.86	2247202.47	5.00	0.00
					6268028.73	2247196.23	5.00	0.00
					6268033.60	2247190.74	5.00	0.00
					6268039.32	2247186.14	5.00	0.00
					6268045.73	2247182.57	5.00	0.00
					6268052.66	2247180.13	5.00	0.00
					6268059.89	2247178.90	5.00	0.00
					6268182.30	2247177.83	5.00	0.00
					6268182.30	2247159.74	5.00	0.00
					6268214.77	2247158.14	5.00	0.00
					6268241.38	2247154.41	5.00	0.00
					6268242.44	2247137.38	5.00	0.00
					6268223.81	2247134.72	5.00	0.00
					6268226.48	2247113.43	5.00	0.00
					6268081.71	2247115.03	5.00	0.00
					6268065.44	2247113.62	5.00	0.00
					6268049.14	2247114.69	5.00	0.00
					6268033.19	2247118.22	5.00	0.00
					6268017.96	2247124.12	5.00	0.00
					6268003.79	2247132.25	5.00	0.00
					6267991.02	2247142.44	5.00	0.00
					6267979.94	2247154.44	5.00	0.00
					6267970.81	2247167.98	5.00	0.00
					6267963.82	2247182.74	5.00	0.00
					6267959.15	2247198.40	5.00	0.00
					6267956.91	2247214.58	5.00	0.00
					6267957.14	2247230.91	5.00	0.00
					6267959.84	2247247.02	5.00	0.00
					6267981.13	2247343.88	5.00	0.00
AREASOURCE	5.00	a			6269365.04	2247826.42	5.00	0.00
					6269413.38	2247832.46	5.00	0.00
					6269414.13	2247796.97	5.00	0.00
					6269431.50	2247796.21	5.00	0.00
					6269450.38	2247742.59	5.00	0.00
					6269477.56	2247628.56	5.00	0.00
					6269494.93	2247631.58	5.00	0.00
					6269496.44	2247245.69	5.00	0.00
					6269382.41	2247246.45	5.00	0.00
					6269383.92	2247340.85	5.00	0.00
					6269365.80	2247341.60	5.00	0.00
AREASOURCE	5.00	a			6269270.76	2247178.70	5.00	0.00
					6269424.46	2247178.34	5.00	0.00
					6269424.64	2247159.15	5.00	0.00
					6269471.45	2247158.25	5.00	0.00
					6269471.81	2247113.24	5.00	0.00
					6269279.73	2247114.31	5.00	0.00
					6269279.55	2247133.14	5.00	0.00
					6269271.12	2247133.32	5.00	0.00

Barrier(s)

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
			left	right		horz.	vert.	Begin		End		x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
BARRIERS		BARRIERS00001						14.00	a			6268253.21	2247262.13	14.00	0.00
												6268253.78	2247234.58	14.00	0.00
BARRIERS		BARRIERS00002						14.00	a			6268252.06	2247192.68	14.00	0.00
												6268252.64	2247114.63	14.00	0.00
												6269147.95	2247111.76	14.00	0.00
												6269149.10	2247162.84	14.00	0.00
												6269181.24	2247162.84	14.00	0.00
BARRIERS		BARRIERS00003						14.00	a			6269229.45	2247162.84	14.00	0.00
												6269229.45	2247182.35	14.00	0.00

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			Coordinates			
			left	right		horz.	vert.	Begin		End	x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERS		BARRIERS00004						14.00	a		6269229.45	2247225.39	14.00	0.00
											6269230.02	2247295.41	14.00	0.00
BARRIERS		BARRIERS00005						14.00	a		6268256.35	2247990.05	14.00	0.00
											6268255.63	2248043.30	14.00	0.00
BARRIERS		BARRIERS00006						14.00	a		6268257.79	2248083.60	14.00	0.00
											6268255.63	2248136.85	14.00	0.00
											6269414.90	2248131.09	14.00	0.00
											6269411.30	2247969.90	14.00	0.00
											6269419.94	2247948.32	14.00	0.00
BARRIERS		BARRIERS00007						14.00	a		6268235.30	2249443.41	14.00	0.00
											6268249.09	2249441.96	14.00	0.00
BARRIERS		BARRIERS00008						14.00	a		6268194.68	2249444.14	14.00	0.00
											6268118.50	2249443.41	14.00	0.00
											6268119.23	2249340.40	14.00	0.00
											6268167.11	2249338.94	14.00	0.00
											6268167.11	2249309.93	14.00	0.00
BARRIERS		BARRIERS00009						14.00	a		6268164.93	2249267.85	14.00	0.00
											6268164.21	2249238.83	14.00	0.00
											6268111.25	2249240.28	14.00	0.00
											6268101.81	2248603.31	14.00	0.00
											6268185.41	2248602.68	14.00	0.00
BARRIERS		BARRIERS00010						14.00	a		6268225.96	2248601.98	14.00	0.00
											6268238.84	2248601.78	14.00	0.00
BARRIERS		BARRIERS00011						14.00	a		6268808.79	2249543.15	14.00	0.00
											6268871.03	2249542.29	14.00	0.00
BARRIERS		BARRIERS00012						14.00	a		6268911.76	2249541.72	14.00	0.00
											6268933.25	2249541.34	14.00	0.00
											6268929.67	2249233.10	14.00	0.00
											6268938.15	2249232.91	14.00	0.00
											6268934.57	2248921.09	14.00	0.00
											6268987.36	2248920.71	14.00	0.00
											6268981.51	2248390.01	14.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00001						6.00	a		6267698.90	2251028.62	6.00	0.00
											6268033.10	2251030.79	6.00	0.00
											6268033.10	2251338.95	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00002						6.00	a		6270993.17	2249605.01	6.00	0.00
											6270967.13	2249648.41	6.00	0.00
											6270548.29	2249646.24	6.00	0.00
											6270537.44	2249049.45	6.00	0.00
											6270615.57	2249047.28	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00003						6.00	a		6270619.91	2248988.69	6.00	0.00
											6270539.61	2248986.52	6.00	0.00
											6270537.44	2248428.79	6.00	0.00
											6270622.08	2248428.79	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00004						6.00	a		6271731.02	2247751.71	6.00	0.00
											6271759.23	2247751.71	6.00	0.00
											6271798.29	2247779.92	6.00	0.00
											6271809.14	2248177.05	6.00	0.00
											6270609.06	2248183.56	6.00	0.00
											6270537.44	2248159.69	6.00	0.00
											6270537.44	2248018.63	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00005						6.00	a		6270535.27	2247975.23	6.00	0.00
											6270535.27	2247836.34	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00006						6.00	a		6270530.93	2247738.69	6.00	0.00
											6270528.76	2247556.39	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00007						6.00	a		6270535.27	2247445.72	6.00	0.00
											6270537.44	2247313.34	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00008						6.00	a		6270530.93	2247215.68	6.00	0.00
											6270530.93	2247100.66	6.00	0.00
											6271047.42	2247094.15	6.00	0.00
											6271051.77	2247094.15	6.00	0.00
											6271088.66	2247128.88	6.00	0.00
											6271088.66	2247165.77	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00009						6.00	a		6267528.47	2247128.67	6.00	0.00
											6267527.97	2247249.40	6.00	0.00
											6267413.60	2247249.22	6.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		RIDER4	x	0		45.00	a	6268255.60	2249540.89	45.00	0.00
								6268808.79	2249543.15	45.00	0.00
								6268796.32	2248486.64	45.00	0.00
								6268305.47	2248493.44	45.00	0.00
								6268248.79	2248502.51	45.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6268238.84	2248601.78	45.00	0.00
								6268288.47	2248603.40	45.00	0.00
								6268298.67	2249440.00	45.00	0.00
								6268249.09	2249441.96	45.00	0.00
BUILDING		RIDER2	x	0		45.00	a	6268140.33	2247987.13	45.00	0.00
								6268256.35	2247990.05	45.00	0.00
								6268260.32	2247952.54	45.00	0.00
								6269361.81	2247947.14	45.00	0.00
								6269358.56	2247327.75	45.00	0.00
								6269353.16	2247301.81	45.00	0.00
								6269230.02	2247295.41	45.00	0.00
								6268255.99	2247299.65	45.00	0.00
								6268253.21	2247262.13	45.00	0.00
								6268136.01	2247267.22	45.00	0.00
								6268133.85	2247467.19	45.00	0.00

11559 - IDI Rider 2 and 4

CadnaA Noise Prediction Model: 11559-31_CNEL.cna
Date: 24.09.20
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	36.1	36.1	42.8	80.0	60.0	60.0				5.00	a	6267953.99	2251042.36	5.00
RECEIVERS		R2	45.3	45.3	52.0	80.0	60.0	60.0				5.00	a	6269521.47	2249726.46	5.00
RECEIVERS		R3	39.2	39.2	45.9	80.0	60.0	60.0				5.00	a	6270550.18	2249080.48	5.00
RECEIVERS		R4	44.5	44.5	51.2	80.0	60.0	60.0				5.00	a	6270531.57	2247228.86	5.00
RECEIVERS		R5	41.1	41.1	47.8	80.0	60.0	60.0				5.00	a	6270525.65	2246507.74	5.00
RECEIVERS		R6	47.3	47.3	53.9	80.0	60.0	60.0				5.00	a	6269079.12	2246723.03	5.00
RECEIVERS		R7	51.5	51.5	58.2	80.0	60.0	60.0				5.00	a	6268391.65	2247030.05	5.00
RECEIVERS		R8	36.1	36.1	42.7	80.0	60.0	60.0				5.00	a	6267528.08	2247205.43	5.00
RECEIVERS		BIO-1	49.5	49.5	56.1	80.0	60.0	60.0				5.00	a	6269722.31	2248681.98	5.00
RECEIVERS		BIO-2	47.0	47.0	53.7	80.0	60.0	60.0				5.00	a	6270123.36	2247308.43	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	80.0	80.0	80.0	Lw	80		585.00	0.00	252.00	0.0	5.00	g	6268278.36	2249525.05	50.00
POINTSOURCE		AC02	80.0	80.0	80.0	Lw	80		585.00	0.00	252.00	0.0	5.00	g	6268281.88	2248538.86	50.00
POINTSOURCE		AC03	80.0	80.0	80.0	Lw	80		585.00	0.00	252.00	0.0	5.00	g	6268170.96	2247302.88	50.00
POINTSOURCE		AC04	80.0	80.0	80.0	Lw	80		585.00	0.00	252.00	0.0	5.00	g	6269316.39	2247334.58	50.00
POINTSOURCE		TRASH01	88.5	88.5	88.5	Lw	88.5		75.00	0.00	45.00	0.0	5.00	a	6269139.22	2247119.65	5.00
POINTSOURCE		TRASH02	88.5	88.5	88.5	Lw	88.5		75.00	0.00	45.00	0.0	5.00	a	6268259.85	2247123.10	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH03	88.5	88.5	88.5	Lw	88.5		75.00	0.00	45.00	0.0	5.00	a	6268128.12	2249430.40	5.00
POINTSOURCE		TRASH04	88.5	88.5	88.5	Lw	88.5		75.00	0.00	45.00	0.0	5.00	a	6268112.78	2248626.32	5.00
POINTSOURCE		TRASH05	88.5	88.5	88.5	Lw	88.5		75.00	0.00	45.00	0.0	5.00	a	6268269.84	2248126.23	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
AREASOURCE		LOADING01	110.1	110.1	110.1	68.7	68.7	68.7	Lw	110.1					8
AREASOURCE		LOADING02	110.1	110.1	110.1	67.1	67.1	67.1	Lw	110.1					8
AREASOURCE		LOADING03	110.1	110.1	110.1	68.0	68.0	68.0	Lw	110.1					8
AREASOURCE		LOADING04	110.1	110.1	110.1	67.9	67.9	67.9	Lw	110.1					8
AREASOURCE		PARKING01	85.0	85.0	85.0	50.4	50.4	50.4	Lw	85					5
AREASOURCE		PARKING02	85.0	85.0	85.0	54.9	54.9	54.9	Lw	85					5
AREASOURCE		PARKING03	85.0	85.0	85.0	50.4	50.4	50.4	Lw	85					5
AREASOURCE		PARKING04	85.0	85.0	85.0	49.9	49.9	49.9	Lw	85					5
AREASOURCE		PARKING05	85.0	85.0	85.0	47.2	47.2	47.2	Lw	85					5
AREASOURCE		PARKING06	85.0	85.0	85.0	54.6	54.6	54.6	Lw	85					5

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a		6268118.50	2249443.41	8.00	0.00
				6268298.67	2249440.00	8.00	0.00
				6268288.47	2248603.40	8.00	0.00
				6268101.81	2248603.31	8.00	0.00
				6268111.25	2249240.28	8.00	0.00
				6268164.21	2249238.83	8.00	0.00
				6268167.11	2249338.94	8.00	0.00
				6268119.23	2249340.40	8.00	0.00
AREASOURCE	8.00	a		6268260.32	2247952.54	8.00	0.00
				6268256.35	2247990.05	8.00	0.00
				6268255.63	2248136.85	8.00	0.00
				6269414.90	2248131.09	8.00	0.00
				6269411.30	2247969.90	8.00	0.00
				6269419.94	2247948.32	8.00	0.00
				6269361.71	2247929.28	8.00	0.00
				6269361.81	2247947.14	8.00	0.00
AREASOURCE	8.00	a		6268253.21	2247262.13	8.00	0.00
				6268255.99	2247299.65	8.00	0.00
				6269230.02	2247295.41	8.00	0.00
				6269229.45	2247162.84	8.00	0.00
				6269149.10	2247162.84	8.00	0.00
				6269147.95	2247111.76	8.00	0.00
				6268252.64	2247114.63	8.00	0.00
AREASOURCE	8.00	a		6268808.79	2249543.15	8.00	0.00
				6268933.25	2249541.34	8.00	0.00
				6268929.67	2249233.10	8.00	0.00
				6268938.15	2249232.91	8.00	0.00
				6268934.57	2248921.09	8.00	0.00
				6268987.36	2248920.71	8.00	0.00
				6268981.51	2248390.01	8.00	0.00
				6268795.57	2248392.41	8.00	0.00
				6268796.32	2248486.64	8.00	0.00
AREASOURCE	5.00	a		6268292.17	2249619.11	5.00	0.00
				6268669.69	2249615.91	5.00	0.00
				6268670.15	2249597.17	5.00	0.00
				6268829.21	2249593.06	5.00	0.00
				6268829.21	2249548.27	5.00	0.00
				6268305.88	2249555.58	5.00	0.00
				6268306.79	2249574.32	5.00	0.00
				6268290.80	2249576.15	5.00	0.00
AREASOURCE	5.00	a		6268116.18	2248598.27	5.00	0.00
				6268180.61	2248597.46	5.00	0.00
				6268178.60	2248480.68	5.00	0.00
				6268176.99	2248434.77	5.00	0.00
				6268176.99	2248417.85	5.00	0.00
				6268114.57	2248417.85	5.00	0.00
				6268114.57	2248446.44	5.00	0.00
				6268133.09	2248446.44	5.00	0.00
				6268133.90	2248472.62	5.00	0.00
				6268115.37	2248472.62	5.00	0.00
AREASOURCE	5.00	a		6268242.23	2248444.43	5.00	0.00
				6268242.23	2248470.61	5.00	0.00
				6268278.47	2248469.40	5.00	0.00
				6268278.07	2248487.92	5.00	0.00

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
					6268324.79	2248487.92	5.00	0.00
					6268779.06	2248481.48	5.00	0.00
					6268782.68	2248437.99	5.00	0.00
					6268663.47	2248438.79	5.00	0.00
					6268661.86	2248421.07	5.00	0.00
					6268242.63	2248426.31	5.00	0.00
AREASOURCE	5.00	a			6268039.14	2247522.71	5.00	0.00
					6268081.18	2247511.00	5.00	0.00
					6268051.38	2247417.33	5.00	0.00
					6268069.47	2247409.88	5.00	0.00
					6268021.04	2247231.05	5.00	0.00
					6268020.16	2247223.77	5.00	0.00
					6268020.51	2247216.43	5.00	0.00
					6268022.09	2247209.27	5.00	0.00
					6268024.86	2247202.47	5.00	0.00
					6268028.73	2247196.23	5.00	0.00
					6268033.60	2247190.74	5.00	0.00
					6268039.32	2247186.14	5.00	0.00
					6268045.73	2247182.57	5.00	0.00
					6268052.66	2247180.13	5.00	0.00
					6268059.89	2247178.90	5.00	0.00
					6268182.30	2247177.83	5.00	0.00
					6268182.30	2247159.74	5.00	0.00
					6268214.77	2247158.14	5.00	0.00
					6268241.38	2247154.41	5.00	0.00
					6268242.44	2247137.38	5.00	0.00
					6268223.81	2247134.72	5.00	0.00
					6268226.48	2247113.43	5.00	0.00
					6268081.71	2247115.03	5.00	0.00
					6268065.44	2247113.62	5.00	0.00
					6268049.14	2247114.69	5.00	0.00
					6268033.19	2247118.22	5.00	0.00
					6268017.96	2247124.12	5.00	0.00
					6268003.79	2247132.25	5.00	0.00
					6267991.02	2247142.44	5.00	0.00
					6267979.94	2247154.44	5.00	0.00
					6267970.81	2247167.98	5.00	0.00
					6267963.82	2247182.74	5.00	0.00
					6267959.15	2247198.40	5.00	0.00
					6267956.91	2247214.58	5.00	0.00
					6267957.14	2247230.91	5.00	0.00
					6267959.84	2247247.02	5.00	0.00
					6267981.13	2247343.88	5.00	0.00
AREASOURCE	5.00	a			6269365.04	2247826.42	5.00	0.00
					6269413.38	2247832.46	5.00	0.00
					6269414.13	2247796.97	5.00	0.00
					6269431.50	2247796.21	5.00	0.00
					6269450.38	2247742.59	5.00	0.00
					6269477.56	2247628.56	5.00	0.00
					6269494.93	2247631.58	5.00	0.00
					6269496.44	2247245.69	5.00	0.00
					6269382.41	2247246.45	5.00	0.00
					6269383.92	2247340.85	5.00	0.00
					6269365.80	2247341.60	5.00	0.00
AREASOURCE	5.00	a			6269270.76	2247178.70	5.00	0.00
					6269424.46	2247178.34	5.00	0.00
					6269424.64	2247159.15	5.00	0.00
					6269471.45	2247158.25	5.00	0.00
					6269471.81	2247113.24	5.00	0.00
					6269279.73	2247114.31	5.00	0.00
					6269279.55	2247133.14	5.00	0.00
					6269271.12	2247133.32	5.00	0.00

Barrier(s)

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
			left	right		horz.	vert.	Begin		End		x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
BARRIERS		BARRIERS00001						14.00	a			6268253.21	2247262.13	14.00	0.00
												6268253.78	2247234.58	14.00	0.00
BARRIERS		BARRIERS00002						14.00	a			6268252.06	2247192.68	14.00	0.00
												6268252.64	2247114.63	14.00	0.00
												6269147.95	2247111.76	14.00	0.00
												6269149.10	2247162.84	14.00	0.00
												6269181.24	2247162.84	14.00	0.00
BARRIERS		BARRIERS00003						14.00	a			6269229.45	2247162.84	14.00	0.00
												6269229.45	2247182.35	14.00	0.00

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			Coordinates			
			left	right		horz.	vert.	Begin		End	x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERS		BARRIERS00004						14.00	a		6269229.45	2247225.39	14.00	0.00
											6269230.02	2247295.41	14.00	0.00
BARRIERS		BARRIERS00005						14.00	a		6268256.35	2247990.05	14.00	0.00
											6268255.63	2248043.30	14.00	0.00
BARRIERS		BARRIERS00006						14.00	a		6268257.79	2248083.60	14.00	0.00
											6268255.63	2248136.85	14.00	0.00
											6269414.90	2248131.09	14.00	0.00
											6269411.30	2247969.90	14.00	0.00
											6269419.94	2247948.32	14.00	0.00
BARRIERS		BARRIERS00007						14.00	a		6268235.30	2249443.41	14.00	0.00
											6268249.09	2249441.96	14.00	0.00
BARRIERS		BARRIERS00008						14.00	a		6268194.68	2249444.14	14.00	0.00
											6268118.50	2249443.41	14.00	0.00
											6268119.23	2249340.40	14.00	0.00
											6268167.11	2249338.94	14.00	0.00
											6268167.11	2249309.93	14.00	0.00
BARRIERS		BARRIERS00009						14.00	a		6268164.93	2249267.85	14.00	0.00
											6268164.21	2249238.83	14.00	0.00
											6268111.25	2249240.28	14.00	0.00
											6268101.81	2248603.31	14.00	0.00
											6268185.41	2248602.68	14.00	0.00
BARRIERS		BARRIERS00010						14.00	a		6268225.96	2248601.98	14.00	0.00
											6268238.84	2248601.78	14.00	0.00
BARRIERS		BARRIERS00011						14.00	a		6268808.79	2249543.15	14.00	0.00
											6268871.03	2249542.29	14.00	0.00
BARRIERS		BARRIERS00012						14.00	a		6268911.76	2249541.72	14.00	0.00
											6268933.25	2249541.34	14.00	0.00
											6268929.67	2249233.10	14.00	0.00
											6268938.15	2249232.91	14.00	0.00
											6268934.57	2248921.09	14.00	0.00
											6268987.36	2248920.71	14.00	0.00
											6268981.51	2248390.01	14.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00001						6.00	a		6267698.90	2251028.62	6.00	0.00
											6268033.10	2251030.79	6.00	0.00
											6268033.10	2251338.95	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00002						6.00	a		6270993.17	2249605.01	6.00	0.00
											6270967.13	2249648.41	6.00	0.00
											6270548.29	2249646.24	6.00	0.00
											6270537.44	2249049.45	6.00	0.00
											6270615.57	2249047.28	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00003						6.00	a		6270619.91	2248988.69	6.00	0.00
											6270539.61	2248986.52	6.00	0.00
											6270537.44	2248428.79	6.00	0.00
											6270622.08	2248428.79	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00004						6.00	a		6271731.02	2247751.71	6.00	0.00
											6271759.23	2247751.71	6.00	0.00
											6271798.29	2247779.92	6.00	0.00
											6271809.14	2248177.05	6.00	0.00
											6270609.06	2248183.56	6.00	0.00
											6270537.44	2248159.69	6.00	0.00
											6270537.44	2248018.63	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00005						6.00	a		6270535.27	2247975.23	6.00	0.00
											6270535.27	2247836.34	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00006						6.00	a		6270530.93	2247738.69	6.00	0.00
											6270528.76	2247556.39	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00007						6.00	a		6270535.27	2247445.72	6.00	0.00
											6270537.44	2247313.34	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00008						6.00	a		6270530.93	2247215.68	6.00	0.00
											6270530.93	2247100.66	6.00	0.00
											6271047.42	2247094.15	6.00	0.00
											6271051.77	2247094.15	6.00	0.00
											6271088.66	2247128.88	6.00	0.00
											6271088.66	2247165.77	6.00	0.00
BARRIER_EXISTING		BARRIER_EXISTING00009						6.00	a		6267528.47	2247128.67	6.00	0.00
											6267527.97	2247249.40	6.00	0.00
											6267413.60	2247249.22	6.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		RIDER4	x	0		45.00	a	6268255.60	2249540.89	45.00	0.00
								6268808.79	2249543.15	45.00	0.00
								6268796.32	2248486.64	45.00	0.00
								6268305.47	2248493.44	45.00	0.00
								6268248.79	2248502.51	45.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6268238.84	2248601.78	45.00	0.00
								6268288.47	2248603.40	45.00	0.00
								6268298.67	2249440.00	45.00	0.00
								6268249.09	2249441.96	45.00	0.00
BUILDING		RIDER2	x	0		45.00	a	6268140.33	2247987.13	45.00	0.00
								6268256.35	2247990.05	45.00	0.00
								6268260.32	2247952.54	45.00	0.00
								6269361.81	2247947.14	45.00	0.00
								6269358.56	2247327.75	45.00	0.00
								6269353.16	2247301.81	45.00	0.00
								6269230.02	2247295.41	45.00	0.00
								6268255.99	2247299.65	45.00	0.00
								6268253.21	2247262.13	45.00	0.00
								6268136.01	2247267.22	45.00	0.00
								6268133.85	2247467.19	45.00	0.00