Ramona Gateway

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
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum 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
PVCCSP	Perris Valley Commerce Center Specific Plan
PPV	Peak particle velocity
Project	Ramona Gateway
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed Ramona Gateway development ("Project"). The Project is proposed to consist of a 950,224-square-foot (sf) warehouse building and an eight-building retail component, which will include 16,500 square feet of fast-food restaurant use with drive-through window, 10,200 square feet of fast-food restaurant without drive-through window, a 2,400-square-foot coffee/donut shop with drive-through, a 3,515-square-foot automated car wash with 1 tunnel, and a 16-vehicle fueling position gas station (with a 4,600-square-foot convenience store). The proposed Project is located within the Perris Valley Commerce Center Specific Plan (PVCCSP) planning area of the City of Perris. This study has been prepared to satisfy applicable City of Perris standards and thresholds of significance based on guidance provided by Appendix G of the Guidelines for Implementation of the California Environmental Quality Act (State CEQA Guidelines). (1)

The results of this Ramona Gateway Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Significance Findings	
	Unmitigated	Mitigated
Off-Site Traffic Noise	*Less Than Significant*	-
Operational Noise	*Less Than Significant*	-
Construction Noise	*Potentially Significant*	*Less Than Significant*
Construction Vibration	*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 PVCCSP EIR.
"n/a" = No new significant impacts.

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1 INTRODUCTION

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

1.1 SITE LOCATION

The proposed Project site is located south of Ramona Expressway and between Nevada Avenue and Webster Avenue within the City of Perris' *Perris Valley Commerce Center Specific Plan* (PVCCSP) as shown on Exhibit 1-A. March Air Reserve Base/Inland Port Airport (MARB/IPA) is located approximately 1.2 miles north of the Project site boundary.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of a 950,224-square-foot (sf) warehouse building which will be evaluated assuming 902,713 square feet of high-cube fulfillment center warehouse use (95% of the total square footage) and 47,511 square feet of high-cube cold storage use (5% of the total square footage). The Project also includes an 8-building retail component that fronts Ramona Expressway, which will include 16,500 square feet of fast-food restaurant use with drive-through window, 10,200 square feet of fast-food restaurant without drive-through window, a 2,400-square-foot coffee/donut shop with drive-through, a 3,515-square-foot automated car wash with 1 tunnel, and a 16-vehicle fueling position gas station (with a 4,600-square-foot convenience store). The Project is anticipated to be constructed in one phase with completion during 2024. The Project would also include roadway and access improvements, and utility infrastructure connections along the roadways adjacent to the project site.

The on-site Project-related noise sources are expected to include: loading dock activity, truck movements, roof-top air conditioning units, courtyard activity, drive-through speakerphone, trash enclosure activity, parking lot vehicle movements, car wash tunnel, car wash vacuum, and gas station activity. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hours daily for seven days per week.

EXHIBIT 1-A: LOCATION MAP

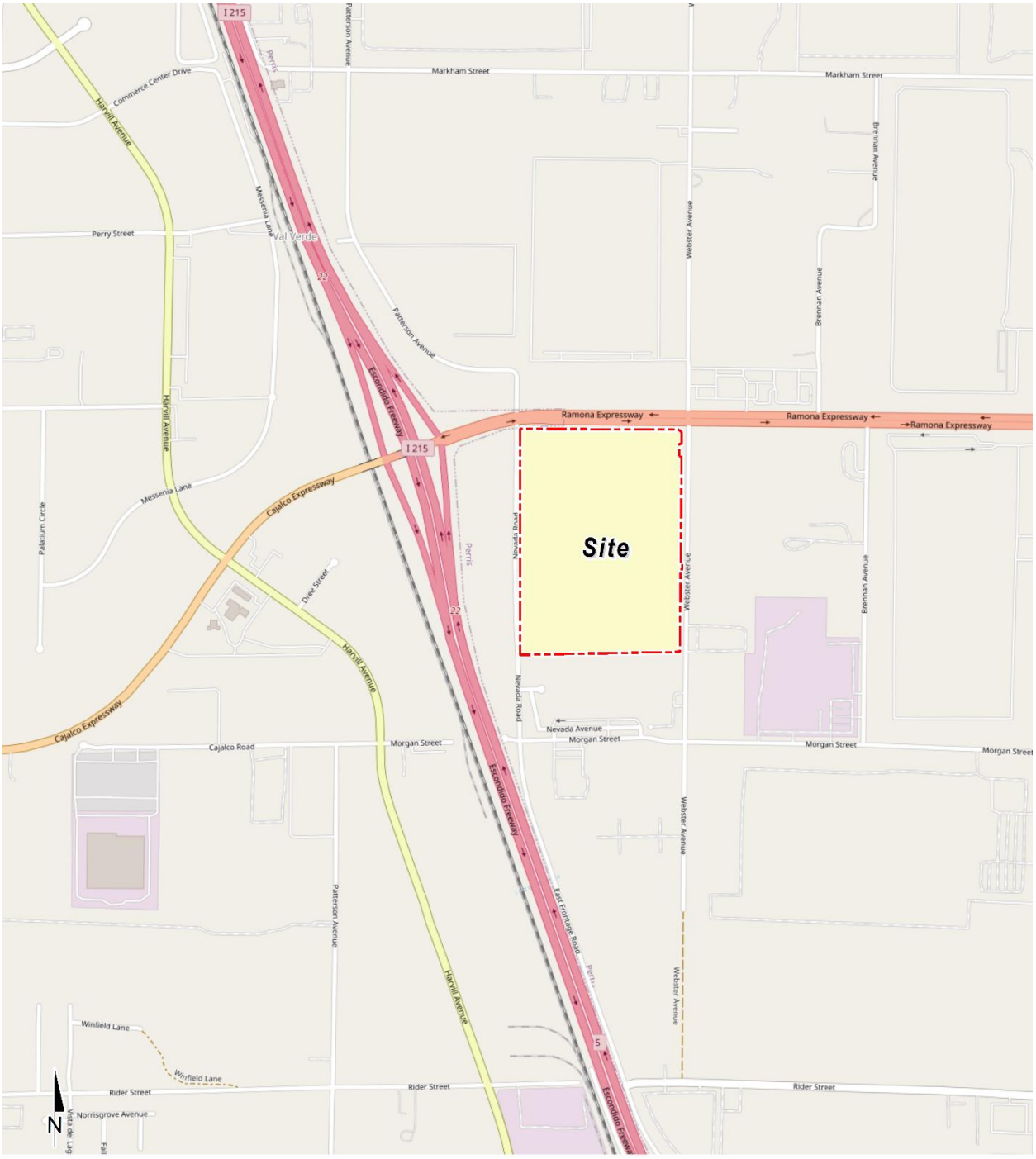
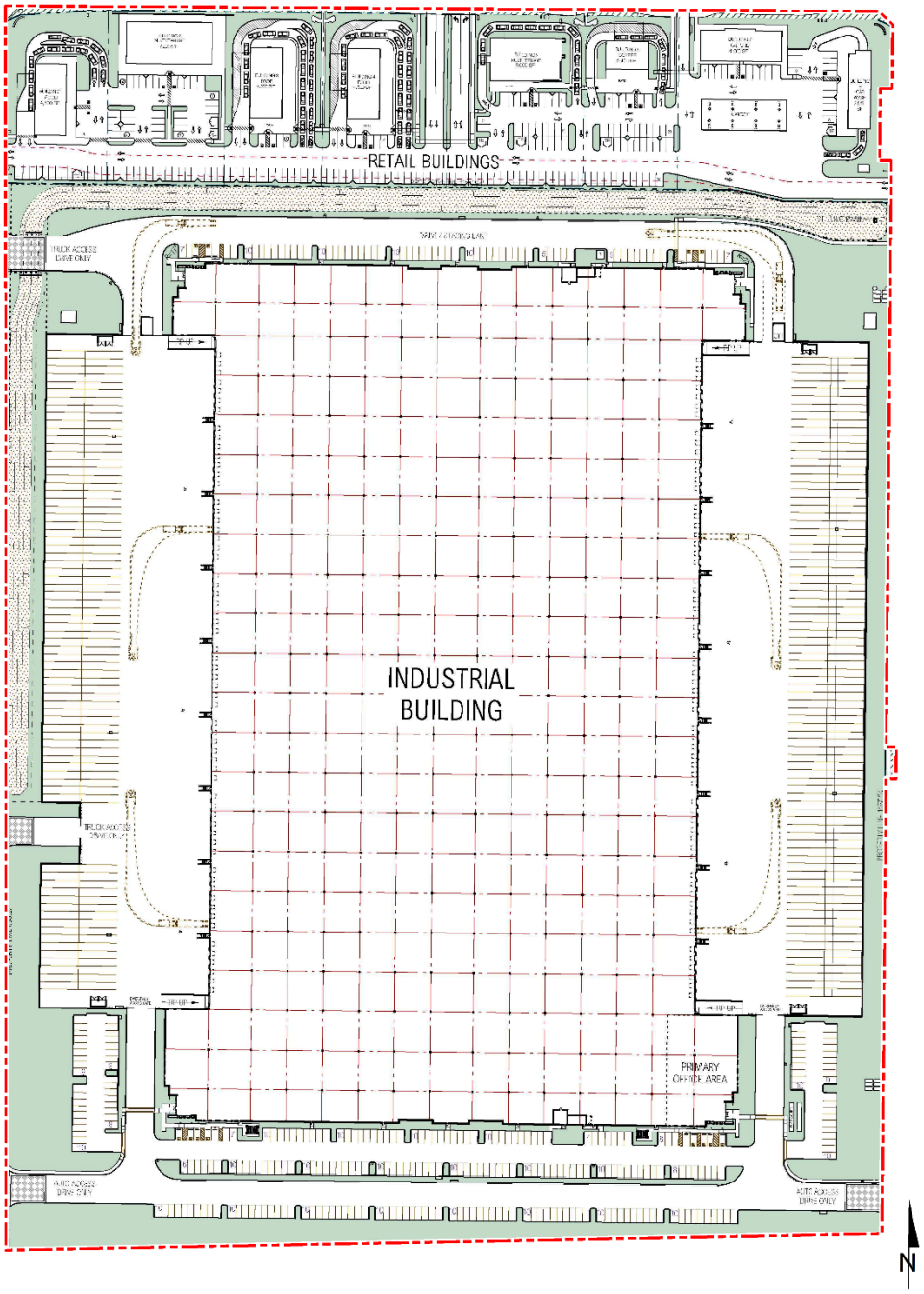


EXHIBIT 1-B: SITE PLAN



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2 FUNDAMENTALS

For consistency with the PVCCSP EIR, the following noise fundamentals discussion was taken from the EIR, Section 4.9 Noise, Page 4.9-2: (3)

The PVCCSP 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 PVCCSP 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). (4) The purpose of the Noise and Safety 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 (CALGreen) contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (4) 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 shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level of 50 dBA L_{eq} in occupied areas during any hour of operation (Section 5.507.4.2). As outlined below in Section 3.7, the Project is not located within the 65 CNEL noise contour of March Air Reserve Base/Inland Port Airport (MARB/IPA).

3.3 CITY OF PERRIS GENERAL PLAN NOISE ELEMENT

The City of Perris has adopted a Noise Element of the General Plan (6) 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. Commercial uses are *normally acceptable* with exterior noise levels below 65 dBA CNEL and *conditionally acceptable* with noise levels below 75 dBA CNEL and *normally unacceptable* with exterior noise level above 75 dBA CNEL. Industrial uses 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. (6)

Based on projected traffic noise levels along roadways adjacent to the Ramona Gateway building presented in Section 7, the Project would be exposed to estimated exterior noise levels of 80.0 dBA CNEL along Ramona Expressway, 77.2 dBA CNEL along Nevada Avenue, and 75.2 dBA CNEL along Webster Avenue. Therefore, the noise levels for the planned commercial land uses along Ramona Expressway are considered *normally unacceptable*, and a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. The planned industrial land use would not exceed those considered *conditionally acceptable*, and conventional construction would ensure that the noise levels are compatible with the proposed use.

3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Ramona Gateway, operational noise such as the expected loading dock activity, truck movements, roof-top air conditioning units, courtyard activity, drive-through speakerphone, trash enclosure activity, parking lot vehicle movements, car wash tunnel, car wash vacuum, and gas station 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 receivers. 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. (7) 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 and large-scale commercial 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] City of Perris Municipal Code, Sections 7.34.040 & 7.34.050 (Appendix 3.1).
[2] 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 Ramona Gateway site, noise from construction activities is 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). The City of Perris Municipal Code, Section 7.34.060, noise level standard of 80 dBA L_{max} applies to residential zones within the City of Perris. (7)

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] City of Perris Municipal Code, Section 7.34.060 (Appendix 3.1).

3.6 CONSTRUCTION VIBRATION STANDARDS

According to the PVCCSP EIR, a major concern regarding construction vibration is building damage. Consequently, construction vibration is generally assessed in terms of peak particle velocity (PPV). The United States Department of Transportation Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage.

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 PVCCSP EIR:

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.*

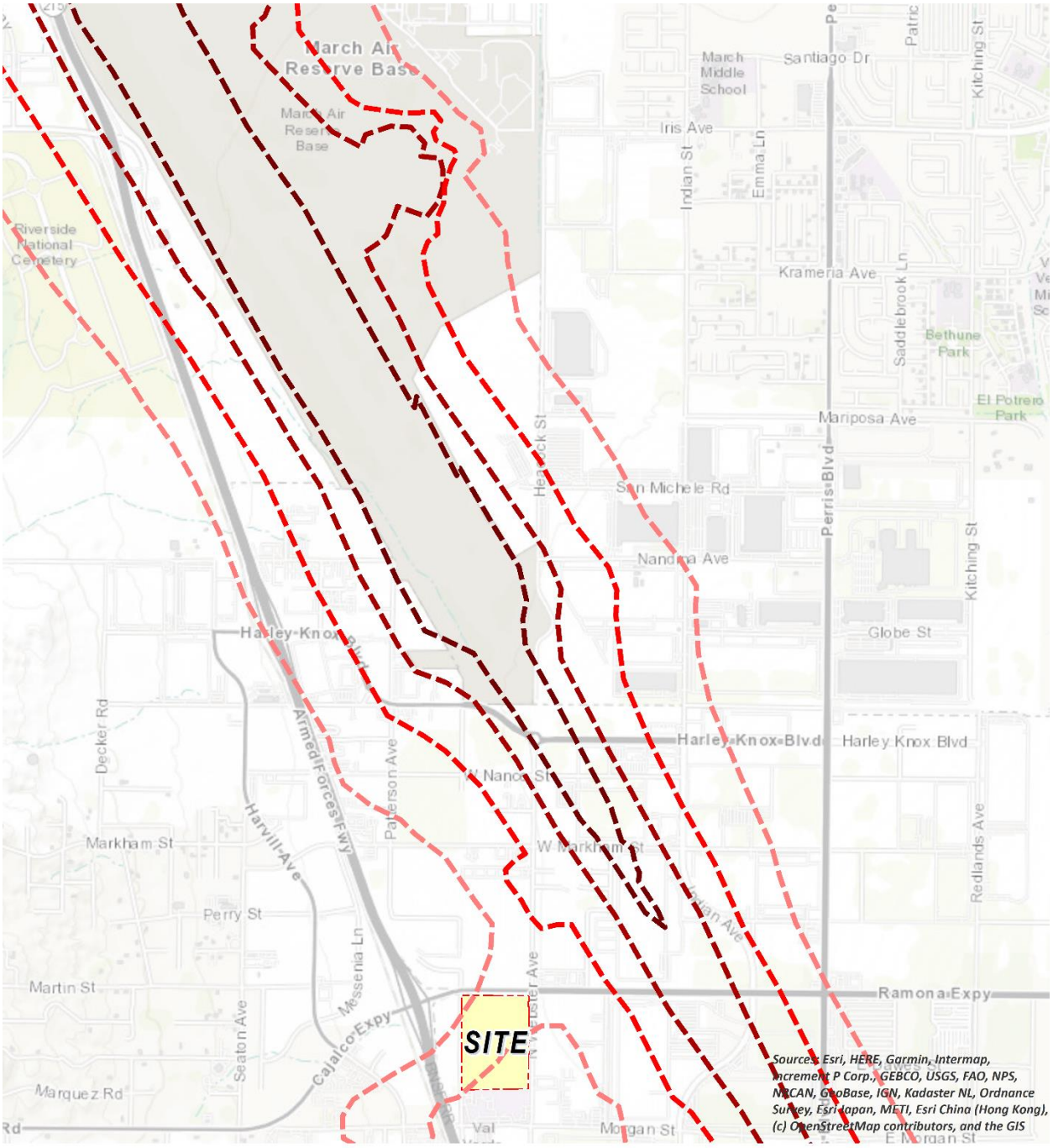
MM Noise 4 *Construction contractors of implementing development projects shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass sensitive land uses or residential dwellings.*

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

March Air Reserve Base/Inland Port Airport (MARB/IPA) is located approximately 1.2 miles north of the Project site boundary. The *March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan* (MARB/IPA ALUCP) includes the policies for determining the land use compatibility of the Project. (8) The MARB/IPA LUCP, Map MA-1, indicates that the Project site is located within Compatibility Zone C-1, and the Table MA-1 Compatibility Zone Factors indicates that this area is considered to have a *moderate to high* noise impact, and is mostly within or near the 60 dBA CNEL noise level contour boundaries. Consistent with the Basic Compatibility Criteria, listed in Table MA-2 of the MARB/IPA LUCP, noise sensitive outdoor uses are not permitted. The MARB/IPA ALUCP does not identify 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 commercial uses are considered *normally acceptable* with exterior noise levels of up to 65 dBA CNEL and industrial uses, are considered *normally acceptable* with exterior noise levels of up to 70 dBA CNEL. (4)

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 outside the 65 dBA CNEL noise level contour boundaries.

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



LEGEND:

Unmitigated Airport Noise Contour Boundaries

N

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 State CEQA Guidelines. (1) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

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

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

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

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

4.1 CEQA THRESHOLDS NOT FURTHER ANALYZED

The closest airport which would require additional noise analysis under State CEQA Guidelines Appendix G noise threshold C is MARB/IPA. As previously described in Section 3.7, the Project site is in Compatibility Zone C-2, and the Table MA-1 Compatibility Zone Factors indicates that this area is considered to have a *moderate to high* noise impact. The OPR guidelines indicate that the Project commercial and industrial land uses are considered *normally acceptable* with the MARB/IPA exterior noise levels Therefore, the potential impacts under CEQA Guidelines Appendix G noise threshold C, are *less than significant* and are not further analyzed in this noise study.

4.2 NOISE SENSITIVE USE NOISE LEVEL INCREASES

As identified in the PVCCSP 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 PVCCSP EIR Thresholds described below at nearest sensitive 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.* (9)

According to the PVCCSP 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 PVCCSP 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 PVCCSP EIR, an increase of 5 dBA or more above without Project noise levels is considered a significant impact at all other sensitive land uses. (3) The City of Perris does not consider noise increases to non-noise-sensitive uses to be significant.

4.3 SIGNIFICANCE CRITERIA SUMMARY

Even though Section 7.34.060 of the Municipal Code limits the use of the 80 dBA L_{max} standard to residential properties, the same 80 dBA L_{max} exterior noise level standard has been used to assess the potential construction noise level impacts at the nearby Val Verde Unified School District and Riverside Office of Education Facilities. Even though Section 7.34.040 of the Municipal Code limits the use of the 80 dBA L_{max} standard to affected residential properties, the same 80 dBA L_{max} exterior noise level standard has been used to assess the potential operational noise level impacts at the Val Verde Unified School District and Riverside County Office of Education Facilities. 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.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site Traffic	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	Noise-Sensitive[3]	At residential land use[2, 6]	80 dBA L_{max}	60 dBA L_{max}
		Within 160 Feet of noise-sensitive use[3]	60 dBA CNEL (exterior)	
		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	
Construction	Noise-Sensitive	At residential land use[4, 6]	80 dBA L_{max}	
		Vibration Level Threshold[5]	0.5 PPV (in/sec)	

[1] PVCCSP EIR, Page 4.9-20.
[2] City of Perris Municipal Code, Section 7.34.040 (Appendix 3.1).
[3] City of Perris General Plan Noise Element, Implementation Measure V.A.1.
[4] City of Perris Municipal Code, Section 7.34.060 (Appendix 3.1).
[5] PVCCSP EIR, Page 4.9-27.
[6] Even though the Municipal Code limits the use of the 80 dBA Lmax standard to affected residential properties, the same 80 dBA Lmax exterior noise level standard has been used to assess the potential noise level impacts at the Val Verde Unified School District and Riverside County Office of Education Facilities.
"Daytime" = 7:01 a.m. - 10:00 p.m.; "Nighttime" = 10:01 p.m. - 7:00 a.m.

5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at four locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday July 21st, 2021. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the 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. (10)

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources*. (11) 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*. (12)

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. (12) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby

sensitive receiver locations allows for a comparison of the before and after Project noise levels and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

5.3 NOISE MEASUREMENT RESULTS

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

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

Location[1]	Description	Energy Average Noise Level (dBA L_{eq})[2]		CNEL
		Daytime	Nighttime	
L1	Located northeast of the Project site near single-family residence at 4063 N Webster Ave.	63.0	58.8	66.7
L2	Located east of the Project site near existing commercial use at 3701 Webster Avenue.	63.0	61.3	68.2
L3	Located south of the Project site near Val Verde High School at 972 Morgan Street.	57.6	57.2	64.0
L4	Located southwest of the Project site near single-family residence at 19543 Patterson Avenue.	52.9	50.3	57.4

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

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

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

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6 TRAFFIC NOISE PREDICTION METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment. Consistent with the *Land Use Compatibility Criteria*, all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (13) 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. (14) 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. (15)

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site dBA CNEL transportation noise impacts. Table 6-1 identifies the 15 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Perris General Plan Circulation Element, and the posted vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the *Ramona Gateway Traffic Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios (16):

- Existing (2022)
- Existing Plus Project (E+P)
- Existing Plus Ambient Growth Plus Cumulative Projects (EAC) (2024)
- Existing Plus Ambient Growth Plus Project Plus Cumulative Projects (EAPC) (2024)
- Horizon Year (2045) Without Project
- Horizon Year (2045) With Project

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

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Classification[1]	Receiving Land Use[2]	Distance from Centerline to Receiving Land Use (Feet)[3]	Vehicle Speed (mph)
1	Nevada Rd.	n/o Morgan St.	Collector	Non-Sensitive	33’	45
2	Webster Av.	n/o Ramona Expy.	Secondary Arterial	Sensitive	47’	35
3	Webster Av.	n/o Morgan St.	Secondary Arterial	Non-Sensitive	47’	35
4	Indian Av.	s/o Morgan St.	Secondary Arterial	Non-Sensitive	47’	45
5	Indian Av.	n/o Ramona Expy.	Secondary Arterial	Sensitive	47’	45
6	Perris Blvd.	n/o Ramona Expy.	Arterial	Non-Sensitive	64’	45
7	Perris Blvd.	s/o Ramona Expy.	Arterial	Non-Sensitive	64’	45
8	Perris Blvd.	s/o Morgan St.	Arterial	Non-Sensitive	64’	45
9	Ramona Expy.	w/o Nevada Rd.	Expressway	Non-Sensitive	92’	55
10	Ramona Expy.	e/o Webster Av.	Expressway	Non-Sensitive	92’	55
11	Ramona Expy.	e/o Indian Av.	Expressway	Non-Sensitive	92’	55
12	Ramona Expy.	e/o Perris Blvd.	Expressway	Sensitive	92’	55
13	Morgan St.	e/o Nevada Rd.	Secondary Arterial	Non-Sensitive	47’	45
14	Morgan St.	e/o Webster Av.	Secondary Arterial	Non-Sensitive	47’	45
15	Morgan St.	e/o Indian Av.	Secondary Arterial	Non-Sensitive	47’	45

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

To quantify the off-site noise levels, the Project-related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]					
			Existing (2022)		EAC (2024)		HY (2045)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Nevada Rd.	n/o Morgan St.	6,797	8,057	7,211	8,471	10,515	11,774
2	Webster Av.	n/o Ramona Expy.	8,699	9,033	9,588	9,922	25,011	25,345
3	Webster Av.	n/o Morgan St.	4,811	5,210	5,388	5,787	7,725	8,125
4	Indian Av.	s/o Morgan St.	9,451	9,851	10,362	10,762	14,955	15,355
5	Indian Av.	n/o Ramona Expy.	9,352	9,608	10,549	10,805	15,093	15,350
6	Perris Blvd.	n/o Ramona Expy.	30,680	31,206	33,555	34,082	48,465	48,992
7	Perris Blvd.	s/o Ramona Expy.	29,530	29,930	32,833	33,233	47,185	47,584
8	Perris Blvd.	s/o Morgan St.	29,573	30,290	32,727	33,444	47,099	47,816
9	Ramona Expy.	w/o Nevada Rd.	47,339	51,736	71,545	75,942	73,396	77,792
10	Ramona Expy.	e/o Webster Av.	37,477	39,541	60,933	62,998	62,399	64,463
11	Ramona Expy.	e/o Indian Av.	35,987	37,795	58,592	60,400	59,999	61,807
12	Ramona Expy.	e/o Perris Blvd.	33,021	33,821	55,186	55,986	56,477	57,277
13	Morgan St.	e/o Nevada Rd.	1,958	2,358	2,078	2,477	3,029	3,429
14	Morgan St.	e/o Webster Av.	4,314	5,113	4,861	5,660	6,957	7,757
15	Morgan St.	e/o Indian Av.	2,200	2,599	2,556	2,956	3,625	4,025

[1] Ramona Gateway Commerce Center Traffic Analysis, Urban Crossroads, Inc.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits[1]			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	77.50%	12.90%	9.60%	100.00%
Medium Trucks	84.80%	4.90%	10.30%	100.00%
Heavy Trucks	86.50%	2.70%	10.80%	100.00%

[1] Typical Southern California vehicle mix.
"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	86.76%	2.77%	10.47%	100.00%

Based on a 24-hour count taken at Webster Avenue and Ramona Expressway (Ramona Gateway Commerce Center Traffic Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth.

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

TABLE 6-5: EXISTING 2022 WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Nevada Rd.	n/o Morgan St.	87.27%	4.84%	7.89%	100.00%
2	Webster Av.	n/o Ramona Expy.	90.83%	5.35%	3.82%	100.00%
3	Webster Av.	n/o Morgan St.	91.20%	5.13%	3.67%	100.00%
4	Indian Av.	s/o Morgan St.	90.86%	5.33%	3.81%	100.00%
5	Indian Av.	n/o Ramona Expy.	90.73%	5.41%	3.86%	100.00%
6	Perris Blvd.	n/o Ramona Expy.	90.63%	5.46%	3.90%	100.00%
7	Perris Blvd.	s/o Ramona Expy.	90.60%	5.48%	3.92%	100.00%
8	Perris Blvd.	s/o Morgan St.	90.70%	5.42%	3.88%	100.00%
9	Ramona Expy.	w/o Nevada Rd.	91.28%	5.08%	3.63%	100.00%
10	Ramona Expy.	e/o Webster Av.	90.97%	5.27%	3.76%	100.00%
11	Ramona Expy.	e/o Indian Av.	90.93%	5.29%	3.78%	100.00%
12	Ramona Expy.	e/o Perris Blvd.	90.70%	5.42%	3.88%	100.00%
13	Morgan St.	e/o Nevada Rd.	92.09%	4.61%	3.30%	100.00%
14	Morgan St.	e/o Webster Av.	91.96%	4.69%	3.35%	100.00%
15	Morgan St.	e/o Indian Av.	91.94%	4.70%	3.36%	100.00%

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

TABLE 6-6: EAC 2024 WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Nevada Rd.	n/o Morgan St.	87.43%	4.87%	7.70%	100.00%
2	Webster Av.	n/o Ramona Expy.	90.79%	5.37%	3.84%	100.00%
3	Webster Av.	n/o Morgan St.	91.13%	5.17%	3.70%	100.00%
4	Indian Av.	s/o Morgan St.	90.83%	5.35%	3.82%	100.00%
5	Indian Av.	n/o Ramona Expy.	90.70%	5.42%	3.88%	100.00%
6	Perris Blvd.	n/o Ramona Expy.	90.62%	5.47%	3.91%	100.00%
7	Perris Blvd.	s/o Ramona Expy.	90.59%	5.49%	3.92%	100.00%
8	Perris Blvd.	s/o Morgan St.	90.68%	5.44%	3.89%	100.00%
9	Ramona Expy.	w/o Nevada Rd.	91.03%	5.23%	3.74%	100.00%
10	Ramona Expy.	e/o Webster Av.	90.79%	5.37%	3.84%	100.00%
11	Ramona Expy.	e/o Indian Av.	90.76%	5.39%	3.85%	100.00%
12	Ramona Expy.	e/o Perris Blvd.	90.61%	5.48%	3.91%	100.00%
13	Morgan St.	e/o Nevada Rd.	92.01%	4.66%	3.33%	100.00%
14	Morgan St.	e/o Webster Av.	91.82%	4.77%	3.41%	100.00%
15	Morgan St.	e/o Indian Av.	91.76%	4.80%	3.43%	100.00%

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

TABLE 6-7: HORIZON YEAR (2045) WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Nevada Rd.	n/o Morgan St.	88.28%	5.06%	6.65%	100.00%
2	Webster Av.	n/o Ramona Expy.	90.60%	5.48%	3.92%	100.00%
3	Webster Av.	n/o Morgan St.	90.94%	5.28%	3.78%	100.00%
4	Indian Av.	s/o Morgan St.	90.72%	5.41%	3.87%	100.00%
5	Indian Av.	n/o Ramona Expy.	90.63%	5.46%	3.90%	100.00%
6	Perris Blvd.	n/o Ramona Expy.	90.58%	5.50%	3.93%	100.00%
7	Perris Blvd.	s/o Ramona Expy.	90.55%	5.51%	3.94%	100.00%
8	Perris Blvd.	s/o Morgan St.	90.62%	5.47%	3.91%	100.00%
9	Ramona Expy.	w/o Nevada Rd.	91.01%	5.24%	3.75%	100.00%
10	Ramona Expy.	e/o Webster Av.	90.78%	5.38%	3.84%	100.00%
11	Ramona Expy.	e/o Indian Av.	90.75%	5.39%	3.85%	100.00%
12	Ramona Expy.	e/o Perris Blvd.	90.61%	5.48%	3.92%	100.00%
13	Morgan St.	e/o Nevada Rd.	91.58%	4.91%	3.51%	100.00%
14	Morgan St.	e/o Webster Av.	91.46%	4.98%	3.56%	100.00%
15	Morgan St.	e/o Indian Av.	91.42%	5.00%	3.58%	100.00%

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

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7 OFF-SITE TRAFFIC NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *Ramona Gateway Traffic Analysis*. (16) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 TRAFFIC NOISE CONTOURS

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

Tables 7-1 through 7-6 present a summary of the exterior dBA CNEL traffic noise levels without barrier attenuation. Roadway segments are analyzed from the without Project to the with Project conditions in each of the following timeframes:

- Existing (2022)
- Existing Plus Project (E+P)
- Existing Plus Ambient Growth Plus Cumulative Projects (EAC) (2024)
- Existing Plus Ambient Growth Plus Project Plus Cumulative Projects (EAPC) (2024)
- Horizon Year (2045) Without Project
- Horizon Year (2045) With Project

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

TABLE 7-1: EXISTING WITHOUT PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Nevada Rd.	n/o Morgan St.	Sensitive	73.5	56	122	262
2	Webster Av.	n/o Ramona Expy.	Sensitive	70.6	RW	111	240
3	Webster Av.	n/o Morgan St.	Sensitive	68.0	RW	75	161
4	Indian Av.	s/o Morgan St.	Non-Sensitive	73.1	75	162	350
5	Indian Av.	n/o Ramona Expy.	Sensitive	73.0	75	161	347
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	76.4	170	367	790
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	76.2	166	358	770
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	76.2	166	358	771
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	78.0	314	677	1459
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	77.0	269	579	1248
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	76.8	262	564	1215
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	76.4	247	533	1147
13	Morgan St.	e/o Nevada Rd.	Sensitive	66.2	RW	57	122
14	Morgan St.	e/o Webster Av.	Non-Sensitive	69.7	45	96	207
15	Morgan St.	e/o Indian Av.	Non-Sensitive	66.7	RW	61	132

[1] Based on a review of existing aerial imagery.

[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

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

TABLE 7-2: EXISTING WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Nevada Rd.	n/o Morgan St.	Sensitive	76.1	84	181	389
2	Webster Av.	n/o Ramona Expy.	Sensitive	70.6	52	112	241
3	Webster Av.	n/o Morgan St.	Sensitive	68.1	RW	76	163
4	Indian Av.	s/o Morgan St.	Non-Sensitive	73.1	76	163	352
5	Indian Av.	n/o Ramona Expy.	Sensitive	73.1	75	162	349
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	76.4	171	368	793
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	76.2	166	358	772
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	76.2	167	359	774
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	78.1	320	690	1487
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	77.1	272	586	1263
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	76.9	265	570	1228
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	76.5	248	535	1153
13	Morgan St.	e/o Nevada Rd.	Sensitive	66.5	RW	59	127
14	Morgan St.	e/o Webster Av.	Non-Sensitive	69.9	RW	99	214
15	Morgan St.	e/o Indian Av.	Non-Sensitive	66.9	RW	63	137

[1] Based on a review of existing aerial imagery.

[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

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

TABLE 7-3: EAC (2024) WITHOUT PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Nevada Rd.	n/o Morgan St.	Sensitive	73.8	59	127	273
2	Webster Av.	n/o Ramona Expy.	Sensitive	71.0	55	119	256
3	Webster Av.	n/o Morgan St.	Sensitive	68.5	RW	81	174
4	Indian Av.	s/o Morgan St.	Non-Sensitive	73.5	80	173	372
5	Indian Av.	n/o Ramona Expy.	Sensitive	73.5	81	175	376
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	76.8	181	389	839
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	76.7	178	384	827
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	76.7	178	383	825
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	79.8	414	892	1921
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	79.1	372	801	1726
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	78.9	362	781	1682
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	78.7	348	750	1616
13	Morgan St.	e/o Nevada Rd.	Sensitive	66.5	RW	59	127
14	Morgan St.	e/o Webster Av.	Non-Sensitive	70.2	48	104	224
15	Morgan St.	e/o Indian Av.	Non-Sensitive	67.4	RW	68	146

[1] Based on a review of existing aerial imagery.

[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

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

TABLE 7-4: EAPC (2024) WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Nevada Rd.	n/o Morgan St.	Sensitive	76.2	86	185	398
2	Webster Av.	n/o Ramona Expy.	Sensitive	71.1	55	119	257
3	Webster Av.	n/o Morgan St.	Sensitive	68.6	RW	82	176
4	Indian Av.	s/o Morgan St.	Non-Sensitive	73.5	81	174	374
5	Indian Av.	n/o Ramona Expy.	Sensitive	73.6	81	175	378
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	76.8	181	390	841
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	76.7	178	385	828
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	76.7	178	384	828
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	79.9	419	903	1946
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	79.1	375	807	1739
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	79.0	365	786	1693
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	78.7	349	752	1621
13	Morgan St.	e/o Nevada Rd.	Sensitive	66.7	RW	61	132
14	Morgan St.	e/o Webster Av.	Non-Sensitive	70.4	50	107	231
15	Morgan St.	e/o Indian Av.	Non-Sensitive	67.6	RW	70	150

[1] Based on a review of existing aerial imagery.

[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

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

TABLE 7-5: HORIZON YEAR (2045) WITHOUT PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Nevada Rd.	n/o Morgan St.	Sensitive	75.4	76	163	351
2	Webster Av.	n/o Ramona Expy.	Sensitive	75.2	104	225	485
3	Webster Av.	n/o Morgan St.	Sensitive	70.1	48	103	221
4	Indian Av.	s/o Morgan St.	Non-Sensitive	75.1	102	220	475
5	Indian Av.	n/o Ramona Expy.	Sensitive	75.1	103	222	478
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	78.4	231	497	1072
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	78.2	227	489	1053
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	78.2	227	488	1051
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	79.9	421	907	1954
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	79.2	378	814	1754
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	79.0	368	793	1709
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	78.8	354	762	1641
13	Morgan St.	e/o Nevada Rd.	Sensitive	68.1	RW	76	164
14	Morgan St.	e/o Webster Av.	Non-Sensitive	71.7	61	132	285
15	Morgan St.	e/o Indian Av.	Non-Sensitive	68.9	RW	86	185

[1] Based on a review of existing aerial imagery.

[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

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

TABLE 7-6: HORIZON YEAR (2045) WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Nevada Rd.	n/o Morgan St.	Sensitive	77.2	100	215	464
2	Webster Av.	n/o Ramona Expy.	Sensitive	75.2	105	225	486
3	Webster Av.	n/o Morgan St.	Sensitive	70.1	48	104	223
4	Indian Av.	s/o Morgan St.	Non-Sensitive	75.1	103	221	477
5	Indian Av.	n/o Ramona Expy.	Sensitive	75.1	103	222	479
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	78.4	231	498	1074
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	78.3	227	489	1054
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	78.3	227	489	1054
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	80.0	426	919	1979
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	79.2	380	820	1766
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	79.1	370	798	1719
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	78.8	355	764	1646
13	Morgan St.	e/o Nevada Rd.	Sensitive	68.3	RW	78	168
14	Morgan St.	e/o Webster Av.	Non-Sensitive	71.9	63	135	291
15	Morgan St.	e/o Indian Av.	Non-Sensitive	69.0	RW	87	188

[1] Based on a review of existing aerial imagery.

[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

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

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report to fully analyze all the existing traffic scenarios identified in the *Ramona Gateway Traffic Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 66.2 to 78.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 66.5 to 78.1 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level impacts will range from 0.0 to 2.6 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

7.3 EAC (2024) PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Existing Plus Ambient Growth Plus Cumulative Projects (2024) without Project conditions CNEL noise levels. The Existing Plus Ambient Growth Plus Cumulative Projects (2024) without Project exterior noise levels are expected to range from 66.5 to 79.8 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the Existing Plus Ambient Growth Plus Cumulative Projects (2024) with Project conditions will range from 66.7 to 79.9 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases will range from 0.0 to 2.4 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

7.4 HY (2045) PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the Horizon Year (2045) without Project conditions CNEL noise levels. The Horizon Year (2045) without Project exterior noise levels are expected to range from 68.1 to 79.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the Horizon Year (2045) with Project conditions will range from 68.3 to 80.0 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from 0.0 to 1.8 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

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

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[1]			Incremental Noise Level Increase Threshold[2]	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Nevada Rd.	n/o Morgan St.	Sensitive	73.5	76.1	2.6	3	No
2	Webster Av.	n/o Ramona Expy.	Sensitive	70.6	70.6	0.0	3	No
3	Webster Av.	n/o Morgan St.	Sensitive	68.0	68.1	0.1	3	No
4	Indian Av.	s/o Morgan St.	Non-Sensitive	73.1	73.1	0.0	n/a	No
5	Indian Av.	n/o Ramona Expy.	Sensitive	73.0	73.1	0.1	3	No
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	76.4	76.4	0.0	n/a	No
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	76.2	76.2	0.0	n/a	No
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	76.2	76.2	0.0	n/a	No
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	78.0	78.1	0.1	n/a	No
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	77.0	77.1	0.1	n/a	No
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	76.8	76.9	0.1	n/a	No
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	76.4	76.5	0.1	3	No
13	Morgan St.	e/o Nevada Rd.	Sensitive	66.2	66.5	0.3	3	No
14	Morgan St.	e/o Webster Av.	Non-Sensitive	69.7	69.9	0.2	n/a	No
15	Morgan St.	e/o Indian Av.	Non-Sensitive	66.7	66.9	0.2	n/a	No

[1] Based on a review of existing aerial imagery.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. The City of Perris does not consider noise increases to non-noise-sensitive uses to be significant.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

TABLE 7-8: EAC (2024) WITH PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[1]			Incremental Noise Level Increase Threshold[2]	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Nevada Rd.	n/o Morgan St.	Sensitive	73.8	76.2	2.4	3	No
2	Webster Av.	n/o Ramona Expy.	Sensitive	71.0	71.1	0.1	3	No
3	Webster Av.	n/o Morgan St.	Sensitive	68.5	68.6	0.1	3	No
4	Indian Av.	s/o Morgan St.	Non-Sensitive	73.5	73.5	0.0	n/a	No
5	Indian Av.	n/o Ramona Expy.	Sensitive	73.5	73.6	0.1	3	No
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	76.8	76.8	0.0	n/a	No
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	76.7	76.7	0.0	n/a	No
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	76.7	76.7	0.0	n/a	No
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	79.8	79.9	0.1	n/a	No
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	79.1	79.1	0.0	n/a	No
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	78.9	79.0	0.1	n/a	No
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	78.7	78.7	0.0	3	No
13	Morgan St.	e/o Nevada Rd.	Sensitive	66.5	66.7	0.2	3	No
14	Morgan St.	e/o Webster Av.	Non-Sensitive	70.2	70.4	0.2	n/a	No
15	Morgan St.	e/o Indian Av.	Non-Sensitive	67.4	67.6	0.2	n/a	No

[1] Based on a review of existing aerial imagery.

[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. The City of Perris does not consider noise increases to non-noise-sensitive uses to be significant.

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

TABLE 7-9: HORIZON YEAR (2045) WITH PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[1]			Incremental Noise Level Increase Threshold[2]	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Nevada Rd.	n/o Morgan St.	Sensitive	75.4	77.2	1.8	3	No
2	Webster Av.	n/o Ramona Expy.	Sensitive	75.2	75.2	0.0	3	No
3	Webster Av.	n/o Morgan St.	Sensitive	70.1	70.1	0.0	3	No
4	Indian Av.	s/o Morgan St.	Non-Sensitive	75.1	75.1	0.0	n/a	No
5	Indian Av.	n/o Ramona Expy.	Sensitive	75.1	75.1	0.0	3	No
6	Perris Blvd.	n/o Ramona Expy.	Non-Sensitive	78.4	78.4	0.0	n/a	No
7	Perris Blvd.	s/o Ramona Expy.	Non-Sensitive	78.2	78.3	0.1	n/a	No
8	Perris Blvd.	s/o Morgan St.	Non-Sensitive	78.2	78.3	0.1	n/a	No
9	Ramona Expy.	w/o Nevada Rd.	Non-Sensitive	79.9	80.0	0.1	n/a	No
10	Ramona Expy.	e/o Webster Av.	Non-Sensitive	79.2	79.2	0.0	n/a	No
11	Ramona Expy.	e/o Indian Av.	Non-Sensitive	79.0	79.1	0.1	n/a	No
12	Ramona Expy.	e/o Perris Blvd.	Sensitive	78.8	78.8	0.0	3	No
13	Morgan St.	e/o Nevada Rd.	Sensitive	68.1	68.3	0.2	3	No
14	Morgan St.	e/o Webster Av.	Non-Sensitive	71.7	71.9	0.2	n/a	No
15	Morgan St.	e/o Indian Av.	Non-Sensitive	68.9	69.0	0.1	n/a	No

[1] Based on a review of existing aerial imagery.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. The City of Perris does not consider noise increases to non-noise-sensitive uses to be significant.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

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8 SENSITIVE 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 PVCCSP 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.

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

R1: Location R1 represents the property line of the existing residence at 4063 N Webster Ave, approximately 509 feet northeast of the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.

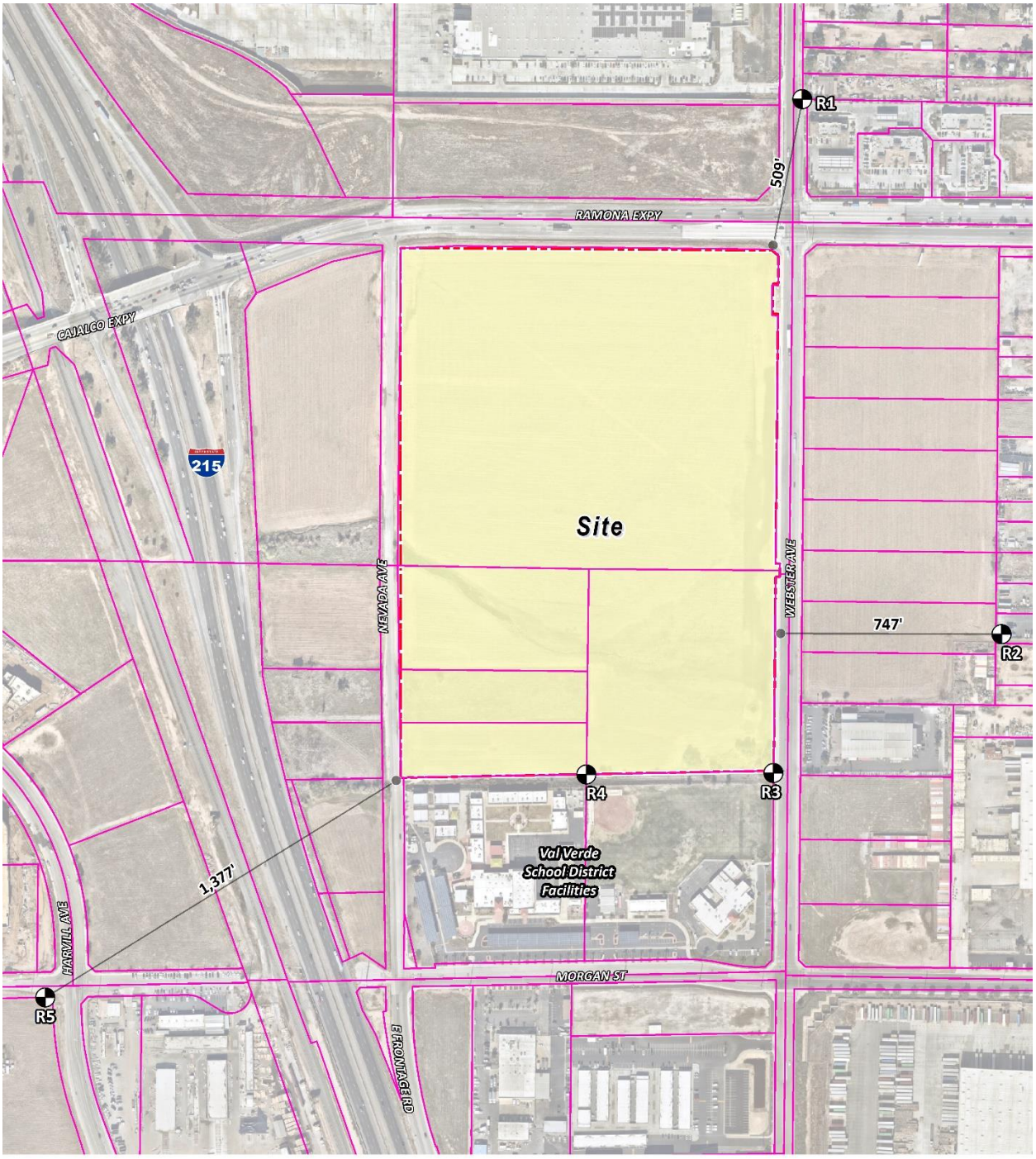
R2: Location R2 represents the property line of the existing noise sensitive residence at 3772 Brennan Avenue approximately 747 feet east of the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

R3: Location R3 represents the northeast property line of the existing Val Verde School District athletic field. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

R4: Location R4 represents the northern property line of the existing noise sensitive Val Verde High School at 972 Morgan Street, immediately south of the Project site property line. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.

R5: Location R5 represents the property line of the existing noise sensitive residence at 19542 Patterson Avenue, approximately 1,377 feet southwest of the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.

EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Ramona Gateway Project. Exhibit 9-A identifies the representative noise source locations used to assess the operational noise levels. The operational noise analysis includes the planned 14-foot-high screen wall on the east and west perimeter of the loading dock areas for the industrial 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 warehouse and retail land uses would be operational 24 hours per day, seven days per week. Consistent with similar warehouse and light industrial uses, the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays.

The on-site Project-related noise sources are expected to include: loading dock activity, truck movements, roof-top air conditioning units, courtyard activity, drive-through speakerphone, trash enclosure activity, parking lot vehicle movements, car wash tunnel, car wash vacuum, and gas station 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 and large commercial 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, truck movements, roof-top air conditioning units, courtyard activity, drive-through speakerphone, trash enclosure activity, parking lot vehicle movements, car wash tunnel, car wash vacuum, and gas station activity all operating continuously. These sources of noise activity will likely vary throughout the day.

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

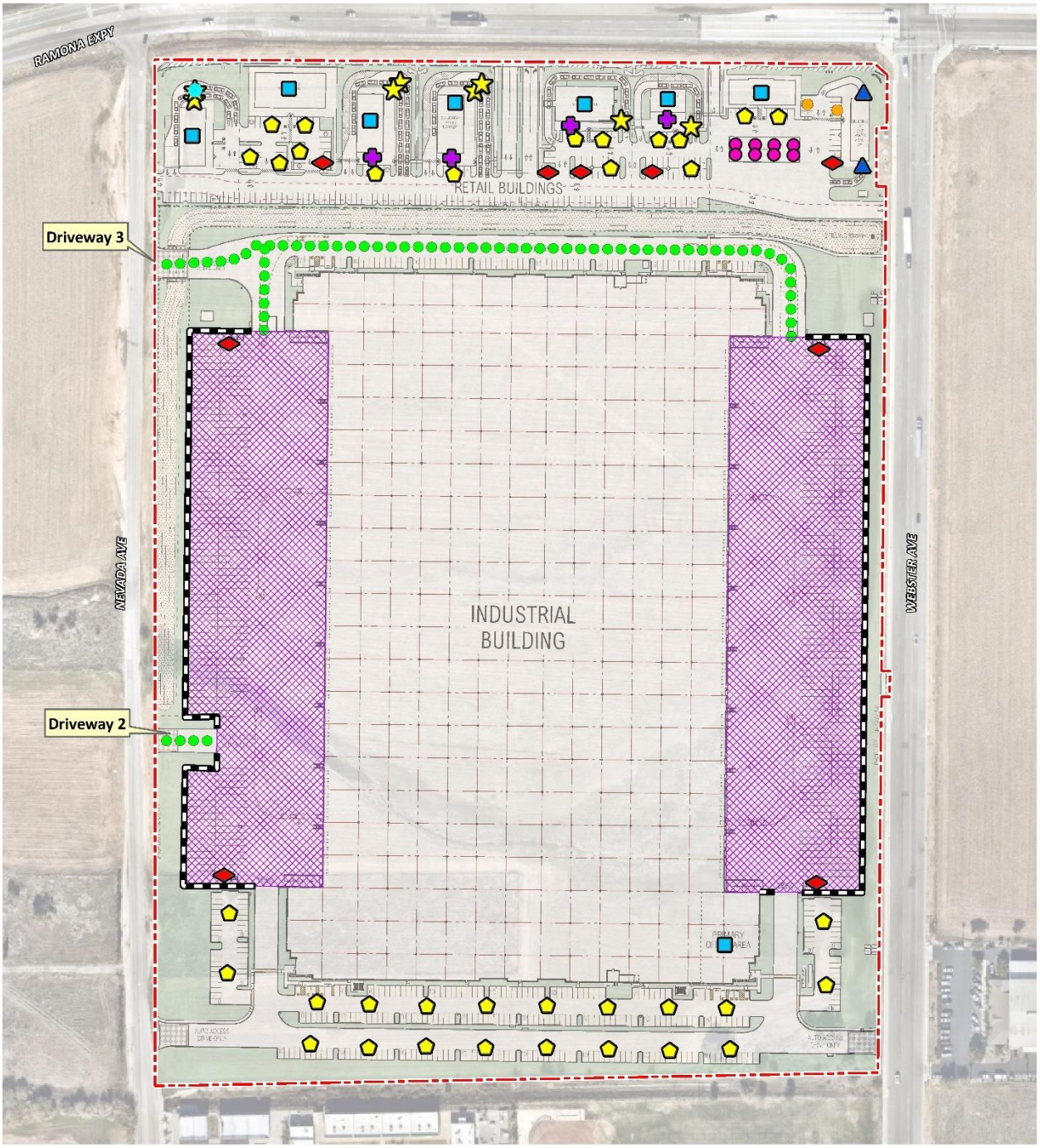


TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source[1]	Noise Source Height (Feet)	Min./Hour[2]		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	8’	60	60	78.4	64.4	88.8	74.8
Truck Movements	8’	-[3]	-[3]	64.0	58.0	79.1	73.1
Roof-Top Air Conditioning Units	5’	39	28	77.2	57.2	77.7	57.7
Courtyard Activity	5’	60	30	73.8	59.8	80.2	66.2
Drive-Through Speakerphone	3’	60	30	62.0	51.5	65.3	54.8
Trash Enclosure Activity	5’	10	10	72.7	56.8	87.0	71.1
Parking Lot Vehicle Movements	5’	60	60	66.6	56.1	70.2	59.7
Car Wash Tunnel	8’	60	30	88.3	74.3	93.3	79.3
Car Wash Vacuum	3’	60	30	74.6	54.6	78.0	58.0
Gas Station Activity	5'	60	60	68.2	48.2	74.4	54.4

[1] As measured by Urban Crossroads, Inc.
[2] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.
[3] Truck Movements are calculated based on the number of events by time of day (See Table 9-2).

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. (10)

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. Since the noise levels generated by cold storage loading dock activity can be slightly higher due to the use of refrigerated trucks or reefers, this analysis conservatively assumes that all loading dock activity is associated with cold storage facilities, even though only 5 percent cold storage is anticipated. To describe the warehouse loading dock activities, short-term reference noise level measurements were collected. The reference loading dock activity noise level measurement was taken over a fourteen-minute period and represents multiple noise sources taken from the center of activity generating a reference noise level of 74.8 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 TRUCK MOVEMENTS

A truck movements reference noise level measurement was taken over a 15-minute period and represents multiple noise sources producing a reference noise level of 73.1 dBA L_{max} at 50 feet. The noise sources included at this measurement location account for the rattling and squeaking during normal opening and closing operations, the gate closure equipment, truck engines idling outside the entry gate, truck movements through the entry gate, and background truck court activities and forklift backup alarm noise.

Consistent with the *Ramona Gateway Traffic Analysis*, the Project is expected to generate a total of approximately 8,372 trip-ends per day (actual vehicles) and includes 378 truck trip-ends per day.(16) This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network. Using the estimated number of truck trips in combination with time-of-day vehicle splits, the number of entry gate and truck movements by driveway location were calculated. As shown on Table 9-2, this information is then used to calculate the entry gate and truck movements operational noise source activity based on the number of events by time of day. Consistent the Traffic Analysis, truck movements have been limited to Driveways 2 and 3 with access to Nevada Road.

TABLE 9-2: TRUCK MOVEMENTS BY LOCATION

Truck Movement Location[1]	Total Project Truck Trips[2]	Trip Dist.[3]		Truck Trips by Location[4]	Time of Day Vehicle Splits[5]			Truck Movements[6]		
		In	Out		Day	Evening	Night	Day	Evening	Night
Driveway 2	378	50%	50%	189	86.50%	2.70%	10.80%	163	5	21
Driveway 3		50%	50%	189	86.50%	2.70%	10.80%	163	5	21

[1] Driveway locations as shown on Exhibit 9-A.
[2] Project truck trips based on Table 4-2 of the Ramona Gateway Commerce Center Traffic Analysis, Urban Crossroads, Inc.
[3] Project truck trip distribution according Ramona Gateway Commerce Center Traffic Analysis, Urban Crossroads, Inc.
[4] Calculated trip trucks per location represents the product of the total (inbound and outbound) project truck trips by and the trip distribution.
[5] Heavy truck time of day vehicle splits as shown on Table 6-3.
[6] Calculated time of day truck movements by location.

9.2.4 ROOF-TOP AIR CONDITIONING UNITS

To assess the noise levels created by the roof-top air conditioning units, reference noise level measurements were collected from 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. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings.

9.2.5 COURTYARD ACTIVITY

To describe the outdoor common area courtyards activity areas, a reference noise level measurement was taken. At 50 feet, the reference noise level is 66.2 dBA L_{max} at a noise source height of 5 feet. The reference noise level measurement includes outdoor eating, drinking, with laughing and talking.

9.2.6 DRIVE-THROUGH SPEAKERPHONE ACTIVITY

To describe the potential noise level impacts associated with potential drive-thru speakerphones and vehicle activities, a reference noise level measurement was collected. The reference noise levels collected are expected to reflect potential drive-thru speakerphone noise level activities at the Project site, since the reference measurement includes both drive-thru speakerphone and vehicle activity noise. The noise sources included in the reference noise level measurement consist of voices of the employees over the speakerphone, customers' voices ordering food, car engines idling, car radios playing music, and cars queuing in the drive-thru lane. At 50 feet from the speakerphone, a reference noise level of 54.8 dBA L_{max} was measured.

9.2.7 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 10 minutes per hour.

9.2.8 PARKING LOT VEHICLE MOVEMENTS

To describe the on-site parking lot activity a reference noise level of 59.7 dBA L_{max} at 50 feet is used. Parking activities are expected to take place during the full hour (60 minutes) throughout the daytime and evening hours. The parking lot noise levels are mainly due cars pulling in and out of parking spaces.

9.2.9 CAR WASH TUNNEL

A reference noise level measurement was taken by Urban Crossroads to describe the air blowers used in a car wash tunnel. A reference noise level of 79.3 dBA L_{max} was measured at the uniform distance of 50 feet. The reference noise level measurement includes an exposed five-unit air blower system with background pressure washer noise and is used to represent the proposed Project facilities. It is anticipated that the air dryers within the proposed car wash will operate continuously during the peak operating conditions. Further, this noise analysis does not include any additional attenuation or directional influence provided by locating the car wash air blower

and dryer equipment inside the tunnel itself, but rather, models the tunnel exit activities as occurring at the building façade. As such, the analysis may conservatively overstate actual noise levels produced by the car wash tunnel air blower and dryer equipment.

9.2.10 CAR WASH VACUUM

To represent self-serve vacuums within the Project site, a reference noise level measurement was collected at an express car wash. The reference noise level measurement represents up to four vacuums operating simultaneously. At a uniform reference distance of 50 feet, the vacuum reference noise level is 58.0 dBA L_{max}. This reference car wash vacuum activity noise level is anticipated to conservatively overstate those of the Project, since this reference noise level includes more vacuums operating simultaneously (4 vacuums) than what will be possible at the Project site (2 vacuums).

9.2.11 GAS STATION ACTIVITY

To describe the potential noise level impacts created by the gas station of the Project, a reference noise level measurement was collected. The reference noise level measurement includes six cars fueling at once, car doors closing, engines starting, fuel pump TV sounds and background car pass-by events within a 3-minute period. At 50 feet from the gas station, a reference noise level of 54.4 dBA L_{max} was measured.

9.3 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels. Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source.

Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment. The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed

noise dBA L_{max} 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, truck movements, roof-top air conditioning units, courtyard activity, drive-through speakerphone, trash enclosure activity, parking lot vehicle movements, car wash tunnel, car wash vacuum, and gas station activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-3 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 52.8 to 62.6 dBA L_{max}.

TABLE 9-3: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA L_{max})				
	R1	R2	R3	R4	R5
Loading Dock Activity	55.1	54.5	62.3	42.6	52.6
Truck Movements	36.8	23.8	25.3	17.8	27.8
Roof-Top Air Conditioning Units	35.6	25.2	31.9	28.0	23.6
Courtyard Activity	27.5	26.7	20.6	16.0	24.1
Drive-Through Speakerphone	31.0	15.3	9.7	5.0	9.2
Trash Enclosure Activity	38.8	28.7	31.7	20.3	24.7
Parking Lot Vehicle Movements	36.0	33.6	50.1	59.0	36.2
Car Wash Tunnel	55.3	43.0	44.6	28.3	30.7
Car Wash Vacuum	32.4	16.8	18.7	2.7	9.7
Gas Station Activity	31.2	24.4	22.3	7.1	12.7
Total (All Noise Sources)	**58.4**	**54.9**	**62.6**	**59.1**	**52.8**

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

Table 9-4 shows the Project operational noise levels during the nighttime hours of 10:01 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 51.7 to 61.6 dBA L_{max}. The differences between the daytime and nighttime noise levels are largely related to the duration of noise activity (Table 9-1).

TABLE 9-4: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA L_{max})				
	R1	R2	R3	R4	R5
Loading Dock Activity	54.2	53.5	61.3	41.6	51.6
Truck Movements	21.2	8.1	9.7	2.2	12.2
Roof-Top Air Conditioning Units	33.1	22.8	29.5	25.6	21.2
Courtyard Activity	23.5	22.7	16.6	12.0	20.1
Drive-Through Speakerphone	27.0	11.3	5.7	1.1	5.3
Trash Enclosure Activity	37.9	27.7	30.8	19.3	23.8
Parking Lot Vehicle Movements	35.0	32.6	49.1	58.1	35.3
Car Wash Tunnel	51.3	39.0	40.6	24.3	26.8
Car Wash Vacuum	28.5	12.8	14.7	0.0	5.7
Gas Station Activity	30.2	23.4	21.3	6.1	11.7
Total (All Noise Sources)	**56.1**	**53.7**	**61.6**	**58.2**	**51.7**

[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 exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-5 shows the operational noise levels associated with Ramona Gateway Project will satisfy the City of Perris 80 dBA L_{max} daytime and 60 dBA L_{max} nighttime exterior noise level standards at all nearby receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

TABLE 9-5: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Land Use	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	Residential	58.4	56.1	80	60	No	No
R2	Residential	54.9	53.7	80	60	No	No
R3	School	62.6	61.6	80	-[5]	No	-[5]
R4	School	59.1	58.2	80	-[5]	No	-[5]
R5	Residential	52.8	51.7	80	60	No	No

[1] See Exhibit 8-A for the receiver locations.
[2] Proposed Project operational noise levels as shown on Tables 9-3 and 9-4.
[3] Exterior noise level standard as shown on Table 3-1.
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
[5] Receiver locations R3 and R4 represent the Val Verde Regional Learning Center and Val Verde High School respectively and do not include any noise sensitive nighttime receivers.
"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 the 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 facilities and large commercial facilities to demonstrate compliance at any noise-sensitive land use within 160 feet of the Project site.

The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when noise can become more intrusive particularly for noise sensitive residential land use. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. Table 9-6 includes the evening and nighttime adjustments made to the operational noise levels during the applicable hours to convert the hourly operational noise levels (L_{eq}) to 24-hour CNELs. Table 9-6 indicates that the 24-hour noise levels associated with the Ramona Gateway at the nearest receiver locations are expected to range from 50.2 to 56.1 dBA CNEL.

TABLE 9-6: OPERATIONAL NOISE LEVEL COMPLIANCE (CNEL)

Receiver Location[1]	Land Use	Project Operational Noise Levels[2]			Exterior Noise Level Standards (CNEL)[3]	Noise Level Standards Exceeded?[4]
		Daytime (dBA L_{eq})	Nighttime (dBA L_{eq})	24-Hour (CNEL)		
R1	Residential	52.2	49.4	56.1	60	No
R2	Residential	47.0	45.8	52.2	60	No
R3	School	54.9	-[5]	-[5]	-[5]	No
R4	School	55.5	-[5]	-[5]	-[5]	No
R5	Residential	44.8	43.8	50.2	60	No

[1] See Exhibit 8-A for the receiver locations.
[2] Proposed Project operational noise level calculations are included in Appendix 9.2.
[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 locations R3 and R4 represent the Val Verde Regional Learning Center and Val Verde High School respectively and do not include any noise sensitive nighttime receivers.
"Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.

Since CNEL noise criteria is used to describe the noise sensitive time periods during the evening and night hours when noise can become more intrusive, the CNEL calculations are limited to the noise sensitive residential receiver locations R1, R2 and R5. Receiver locations R3 and R4 represent the Val Verde Regional Learning Center and Val Verde High School respectively and do not include any noise sensitive nighttime receivers. The Project-related operational noise levels shown on Table 9-6 will satisfy the City of Perris 60 dBA CNEL exterior noise level standards at the nearest receiver locations. The 24-hour noise level calculations are included in Appendix 9.2.

9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

To describe the Project operational noise level increases, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (11) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. As indicated on Tables 9-7, the Project will generate a daytime operational noise level increases ranging from 0.1 to 2.1 dBA L_{eq} at the nearest receiver locations. Table 9-8 shows that the Project will generate a nighttime operational noise level increases ranging from 0.1 to 0.9 dBA L_{eq} at the nearest receiver locations. Appendix 9.2 includes the detailed noise dBA L_{eq} model inputs including the planned 14-foot-high screen wall used to estimate the Project operational noise levels presented in this section.

The Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented on Table 4-1. Therefore, the incremental Project operational noise level increase is considered *less than significant* at all receiver locations.

TABLE 9-7: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Land Use	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	Residential	52.2	L1	63.0	63.3	0.3	3	No
R2	Residential	47.0	L2	63.0	63.1	0.1	3	No
R3	School	54.9	L2	63.0	63.6	0.6	3	No
R4	School	55.5	L3	57.6	59.7	2.1	5	No
R5	Residential	44.8	L4	52.9	53.5	0.6	5	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project daytime operational noise levels as shown on Table 9-6.
[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 9-8: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Land Use	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	Residential	49.4	L1	58.8	59.3	0.5	5	No
R2	Residential	45.8	L2	61.3	61.4	0.1	3	No
R3	School	-[8]	L2	61.3	-[8]	-[8]	-[8]	-[8]
R4	School	-[8]	L3	57.2	-[8]	-[8]	-[8]	-[8]
R5	Residential	43.8	L4	50.3	51.2	0.9	5	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project daytime operational noise levels as shown on Table 9-6.
[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.
[8] Receiver locations R3 and R4 represent the Val Verde Regional Learning Center and Val Verde High School respectively and do not include any noise sensitive nighttime receivers.

10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source activity including the site adjacent roadway improvements in relation to the nearest sensitive receiver locations previously described in Section 8. In addition, to support the Project development, a new off-site gas line will be installed along Ramona Expressway east to Brennan Avenue. The underground utilities will be installed within the existing public right-of-way (ROW) with construction activities moving linearly along a proposed alignment. It is expected that the off-site construction activities would not take place at one location for the entire duration of construction. Construction noise from this off-site work would, therefore, be relatively short term and the noise levels would be reduced as construction work moves linearly along the existing public ROW and farther from sensitive uses.

To prevent high levels of construction noise from impacting noise-sensitive land uses, City of Perris Municipal Code Section 7.34.060 limits construction activities to the hours of 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).

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 sensitive receiver locations can reach high levels. The number and mix of construction equipment are expected to occur in the following stages:

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

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. (17) 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 Project construction activities.

EXHIBIT 10-A: TYPICAL CONSTRUCTION NOISE SOURCE LOCATIONS

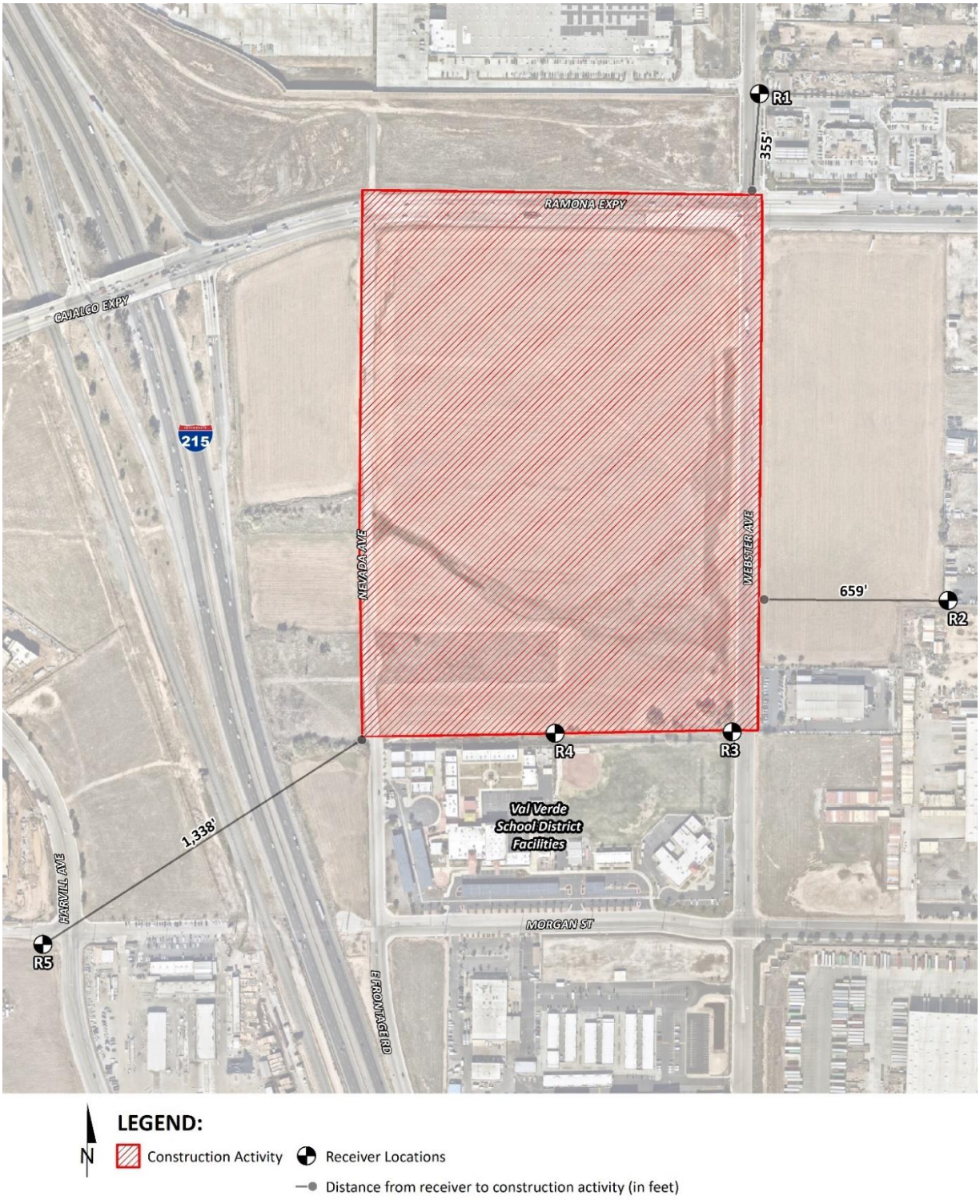


TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

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	
	Scrapers	84	
Building Construction	Cranes	81	85
	Forklifts	85	
	Generator Sets	73	
	Backhoes	78	
	Welders	74	
Arch. Coating	Air Compressors	78	78
Paving	Pavers	77	85
	Paving Equipment	85	
	Rollers	80	
Landscaping	Cranes	81	85
	Forklifts	85	
	Backhoes	78	
	Welders	74	

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

10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference RCNM L_{max} construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts with multiple pieces of equipment operating simultaneously at the nearest receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location.

As shown on Table 10-2, the construction noise levels are expected to range from 62.2 to 84.3 dBA L_{max} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-2: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Highest Construction Noise Levels (dBA L_{max})						
	Site Preparation	Grading	Building Construction	Arch. Coating	Paving	Landscaping	Highest Levels[2]
R1	72.5	75.5	75.5	68.5	75.5	75.5	75.5
R2	71.4	74.4	74.4	67.4	74.4	74.4	74.4
R3	80.5	83.5	83.5	76.5	83.5	83.5	83.5
R4	81.3	84.3	84.3	77.3	84.3	84.3	84.3
R5	66.2	69.2	69.2	62.2	69.2	69.2	69.2

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

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only construction noise levels are evaluated against exterior noise level thresholds established by Section 7.34.060 of City of Perris Municipal Code at the adjacent property line. As shown on Table 10-3, the estimated construction noise levels at the adjacent noise sensitive receiver locations R1, R2 and R5 will satisfy the 80 dBA L_{max} construction noise level standard. However, the construction noise levels at the southern property line adjacent to the Val Verde Unified School District and Riverside Office of Education Facilities will exceed 80 dBA L_{max}, which is the noise standard being applied to these sensitive uses. Therefore, the unmitigated noise impact due to Project construction activities is considered *potentially significant*.

TABLE 10-3: UNMITIGATED CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{max})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	75.5	80	No
R2	74.4	80	No
R3	83.5	80	**Yes**
R4	84.3	80	**Yes**
R5	69.2	80	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations as shown on Table 10-2.
[3] Construction noise level thresholds are limited to the noise sensitive receiver locations (Section 3.5).
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

Therefore, a minimum 8-foot-high noise barrier at the southern Project site boundary is required to reduce the typical construction noise levels as shown on Exhibit 10-B. A permanent 8-foot-high screenwall on the southern project boundary will also satisfy this requirement provided the noise barrier is installed prior to use of any heavy construction equipment or grading activities.

However, if the planned 8-foot-high screenwall is not installed prior to grading permit approval, an 8-foot-high temporary construction noise barrier shall be provided. Table 10-4 shows that the mitigated construction noise levels are expected to range from 62.1 to 78.1 dBA L_{eq} at the parcel boundary of adjacent uses. Appendix 10.2 includes the mitigated typical construction CadnaA noise model calculations.

TABLE 10-4: MITIGATED CONSTRUCTION NOISE LEVELS

Receiver Location[1]	Highest Construction Noise Levels (dBA L_{max})						
	Site Preparation	Grading	Building Construction	Arch. Coating	Paving	Landscaping	Highest Levels[2]
R1	72.5	75.5	75.5	68.5	75.5	75.5	75.5
R2	71.4	74.4	74.4	67.4	74.4	74.4	74.4
R3	75.1	78.1	78.1	71.1	78.1	78.1	78.1
R4	74.6	77.6	77.6	70.6	77.6	77.6	77.6
R5	65.4	68.4	68.4	61.4	68.4	68.4	68.4

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

Table 10-5 shows that the mitigated construction noise levels will satisfy the City of Perris construction noise level standard 80 dBA L_{max} at the adjacent noise sensitive property line to the south. With the required 8-foot-high temporary noise barrier, the mitigated construction noise impacts are considered *less than significant*.

TABLE 10-5: MITIGATED CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{max})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	75.5	80	No
R2	74.4	80	No
R3	78.1	80	No
R4	77.6	80	No
R5	68.4	80	No

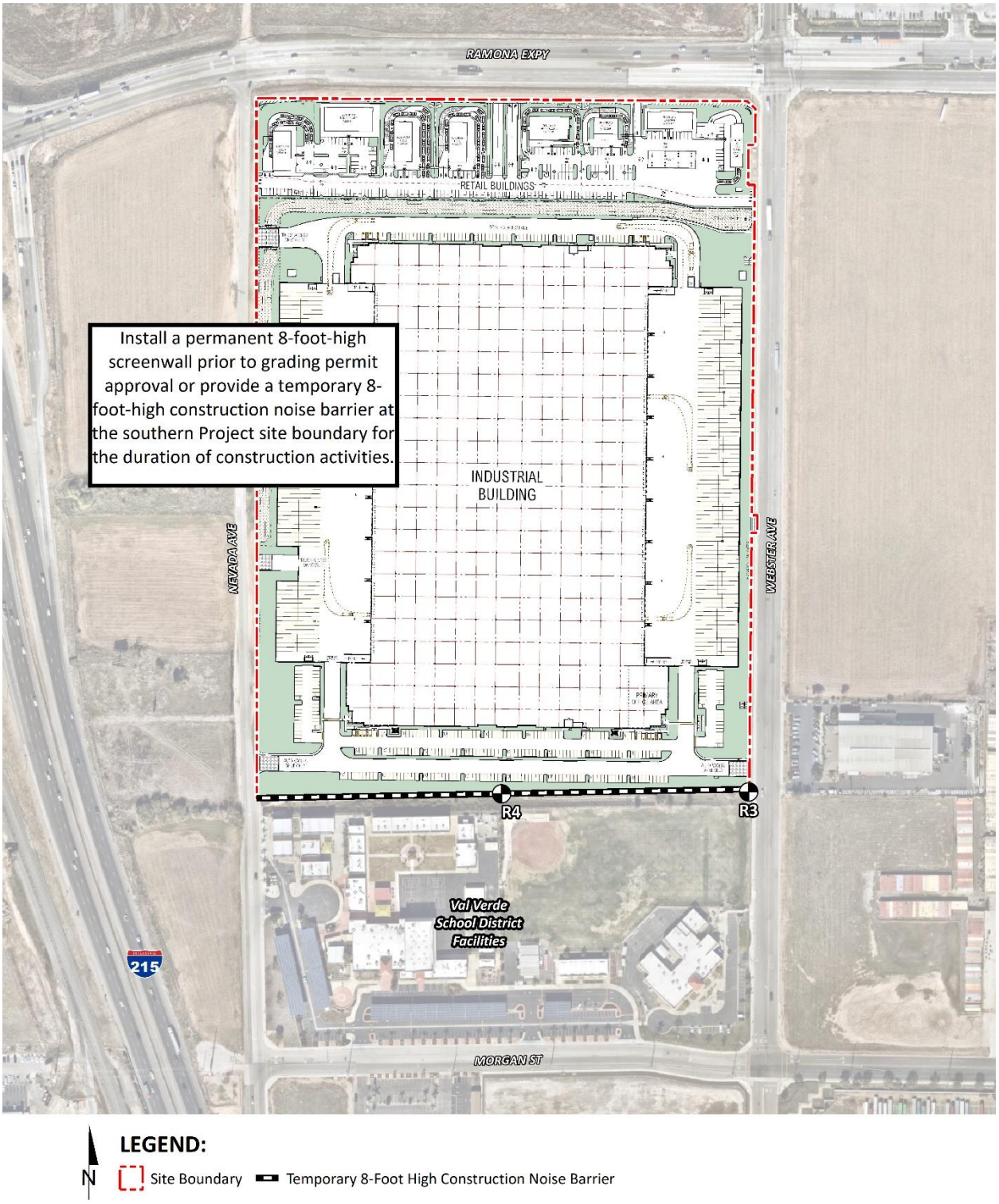
[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations as shown on Table 10-4.
[3] Construction noise level thresholds are limited to the noise sensitive receiver locations (Section 3.5).
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.5 PROJECT CONSTRUCTION NOISE MITIGATION MEASURES

Though construction noise is temporary and intermittent, and will not present any long-term impacts, the following project construction noise mitigation measures shall be provided.

- To reduce construction noise at the Val Verde School District Facilities, the contractor shall install an 8-foot-high noise barrier (temporary or permanent) at the southern Project site boundary for the duration of construction activities. The limits of the noise barrier are shown on Exhibit 10-B. The noise control barrier shall include the following:
    - The noise control barriers must present a solid face from top to bottom.
    - The noise barriers shall be maintained, and any damage promptly repaired. Gaps, holes, or weaknesses in the barrier or openings between the barrier and the ground shall be promptly repaired.
    - The temporary noise barrier shall be constructed using one of the following materials with no decorative cutouts or line-of-sight openings between shielded areas and the noise source:
        - An acoustical blanket (e.g. vinyl acoustic curtains, quilted blankets, or equivalent) attached to the construction site perimeter fence or equivalent temporary fence posts.
    - The permanent noise barrier shall be constructed using one of the following materials with no decorative cutouts or line-of-sight openings between shielded areas and the noise source:
        - Masonry block;
        - Glass (1/4-inch-thick), or other transparent material with sufficient weight per square foot;
        - Earthen berm;
        - Any combination of these construction materials

EXHIBIT 10-B: CONSTRUCTION NOISE MITIGATION MEASURES



10.6 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities will occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours and are generally limited to the actual building area as shown on Exhibit 10-C. Since the nighttime concrete pours will take place outside the permitted City of Perris Municipal Code Section 7.34.060 hours of 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), the Project Applicant will be required to obtain authorization for nighttime work from the City of Perris.

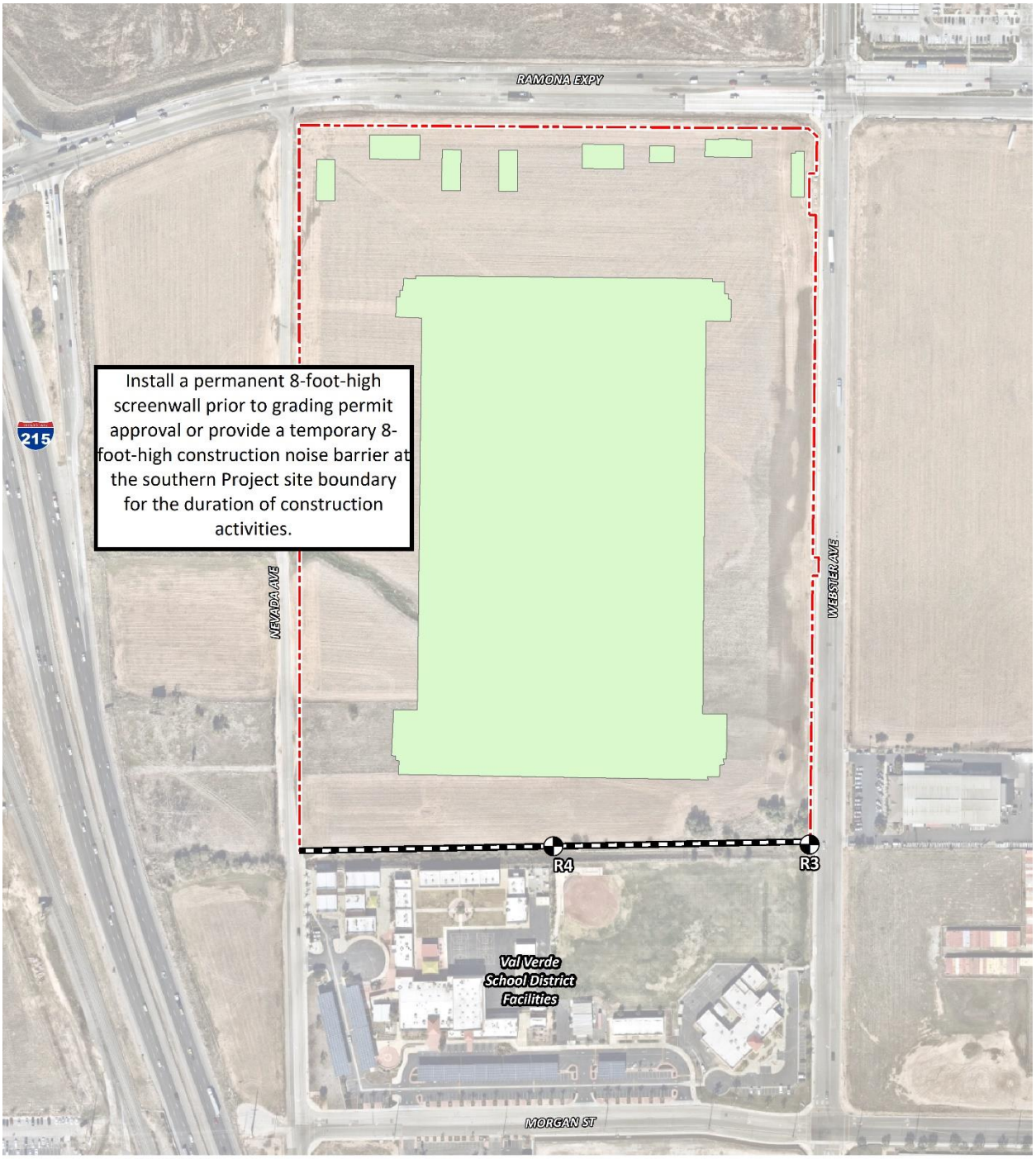
Table 10-6 shows the mitigated concrete pour activities (paving) noise levels with the required 8-foot-high temporary noise barrier will range from 58.0 to 64.8 dBA $L_{eq.}$ at the parcel boundary of adjacent uses. With the required 8-foot-high temporary noise barrier, the mitigated nighttime concrete noise impacts are considered *less than significant*. Appendix 10.3 includes the CadnaA nighttime concrete pour noise model inputs.

TABLE 10-6: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{max})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	69.0	80	No
R2	69.5	80	No
R3	67.8	-[5]	No
R4	70.0	-[5]	No
R5	64.1	80	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations as shown on Table 10-4.
[3] Construction noise level thresholds are limited to the noise sensitive receiver locations (Section 3.5).
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?
[5] Receiver locations R3 and R4 represent the Val Verde Regional Learning Center and Val Verde High School respectively and do not include any noise sensitive nighttime receivers.

EXHIBIT 10-C: NIGHTTIME CONCRETE POUR CONSTRUCTION ACTIVITY



10.7 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. Construction vibration is generally associated with pile driving and rock blasting. However, no pile driving or rock blasting activities are planned for the Project. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-7. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation:
$L_{VdB}(D) = L_{VdB}(25\text{ ft}) - 30\log(D/25)$

TABLE 10-7: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Using the vibration source level of construction equipment provided on Table 10-7 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration building damage impacts. Table 10-8 presents the expected Project related vibration levels at the nearby building structure locations. At distances ranging from 10 to 1,338 feet from the Project construction boundary to the receiver building locations, construction vibration velocity levels are estimated to be between 0.000 and 0.352 PPV (in/sec). Based on maximum acceptable vibration threshold identified in the PVCCSP EIR (Page 4.9-27) of 0.5 PPV (in/sec), the typical Project construction vibration levels will satisfy the building damage thresholds at all receiver building locations. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.

In addition, the typical construction vibration levels are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating.

TABLE 10-8: CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver[1]	Distance to Const. Activity (Feet)[2]	Typical Construction Vibration Levels PPV (in/sec)[3]					Thresholds PPV (in/sec)[4]	Thresholds Exceeded?[5]
		Small bulldozer	Jackhammer	Loaded Trucks	Large bulldozer	Highest Vibration Level		
R1	355'	0.000	0.001	0.001	0.002	0.002	0.5	No
R2	659'	0.000	0.000	0.001	0.001	0.001	0.5	No
R3	10'	0.012	0.138	0.300	0.352	0.352	0.5	No
R4	10'	0.012	0.138	0.300	0.352	0.352	0.5	No
R5	1,338'	0.000	0.000	0.000	0.000	0.000	0.5	No

[1] Receiver locations are shown on Exhibit 10-A.
[2] Distance from Project construction boundary to the receiver building structure.
[3] Based on the Vibration Source Levels of Construction Equipment (Table 10-7).
[4] PVCCSP EIR, Page 4.9-27.
[5] Does the peak vibration exceed the acceptable vibration thresholds?
"PPV" = Peak Particle Velocity

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11 REFERENCES

1.**Association of Environmental Professionals.** *Guidelines for Implementation of the California Environmental Quality Act*. 2022.

2. **City of Perris.** *Perris Valley Commerce Center Specific Plan Final Environmental Impact Report.* July 2011.

3. **Office of Planning and Research.** *State of California General Plan Guidelines.* 2019.

4. **State of California.** *2016 California Green Building Standards Code.* August 2019 Supplement.

5. **City of Perris.** *General Plan Noise Element.* August 2005.

6. —. *Municipal Code, Chapter 7.34 Noise Control.*

7. **Riverside County Airport Land Use Commission.** *March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan.* November 2014.

8. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.

9. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*

10. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.

11. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.

12. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.

13. **California Department of Transportation Environmental Program, Office of Environmental Engineering.** *Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction.* September 1995. TAN 95-03.

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

15. **Urban Crossroads, Inc.** *Ramona Gateway Commerce Center Traffic Analysis.* February 2022.

16. **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 Ramona Gateway Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 584-3148.

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EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 3.1:

CITY OF 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)

APPENDIX 5.1:

STUDY AREA PHOTOS

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JN: 13998 Study Area Photos

L1-E
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L1-N
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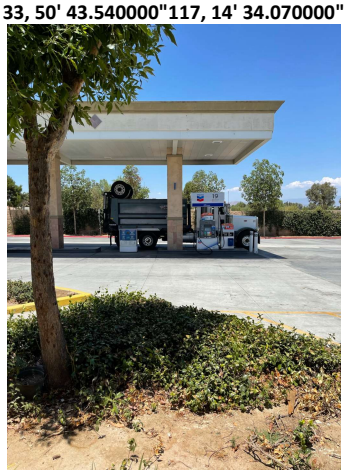

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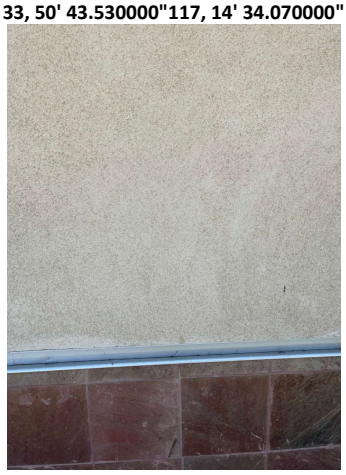

L1-W
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L2-E
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L2-N
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JN: 13998 Study Area Photos

L2-S
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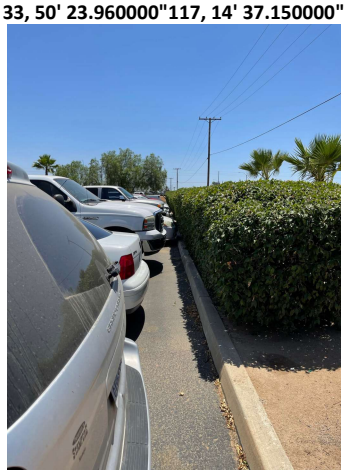

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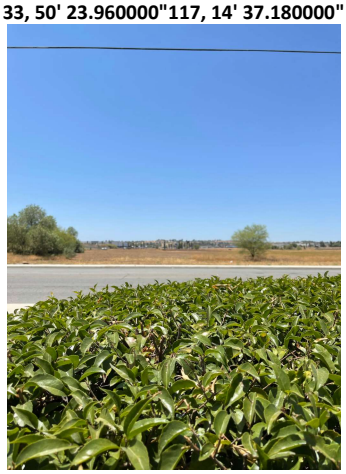

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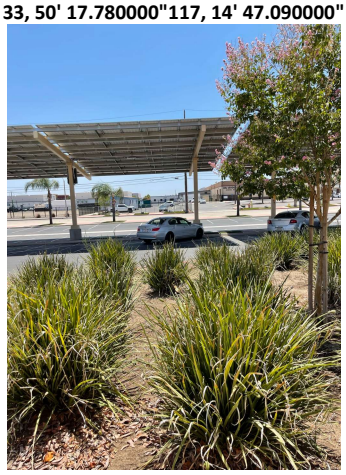

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JN: 13998 Study Area Photos

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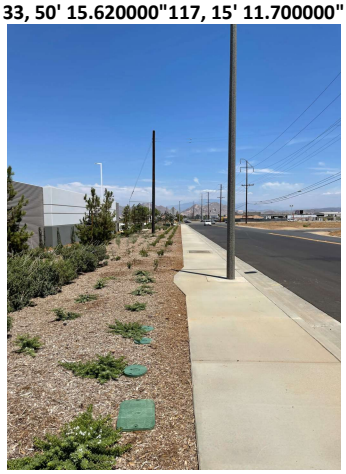

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L4-S
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L4-W
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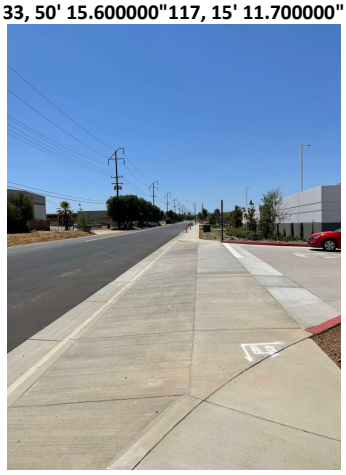

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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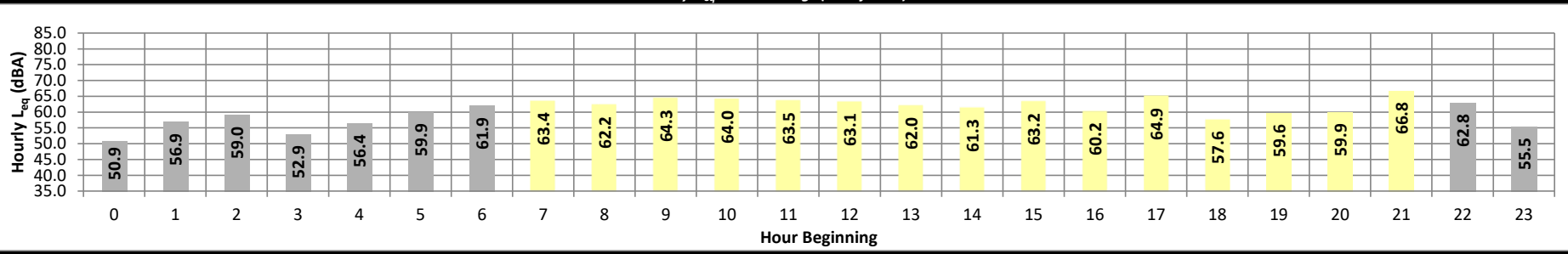
24-Hour Noise Level Measurement Summary

Date: Wednesday, July 21, 2021 | *Location:* L1 - Located northeast of the Project site near single-family | *Meter:* Piccolo II | *JN:* 13998

Project: Ramona Expressway | *Source:* residence at 4063 N Webster Ave. | *Analyst:* A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	50.9	56.7	46.5	56.3	55.9	55.0	54.3	52.1	49.4	47.1	46.9	46.6	50.9	10.0	60.9
	1	56.9	70.2	48.7	69.1	67.2	62.3	59.5	55.2	52.2	49.6	49.3	48.9	56.9	10.0	66.9
	2	59.0	67.8	54.3	67.1	66.1	64.1	62.9	59.2	56.8	54.7	54.6	54.4	59.0	10.0	69.0
	3	52.9	61.2	48.7	60.3	59.0	56.8	55.9	53.1	51.6	49.4	49.1	48.8	52.9	10.0	62.9
	4	56.4	66.6	49.5	65.9	64.7	62.1	60.3	56.3	53.3	50.5	50.0	49.6	56.4	10.0	66.4
	5	59.9	70.5	55.9	69.9	69.2	66.2	64.4	60.7	58.6	56.5	56.2	56.0	59.9	10.0	69.9
	6	61.9	73.1	57.5	72.3	71.2	68.8	67.6	63.6	61.0	58.1	57.9	57.6	61.9	10.0	71.9
Day	7	63.4	74.1	57.9	73.3	72.0	69.3	67.7	64.9	61.1	58.8	58.4	58.0	63.4	0.0	63.4
	8	62.2	69.4	58.8	68.7	67.7	65.9	65.1	62.5	60.9	59.7	59.4	59.0	62.2	0.0	62.2
	9	64.3	76.0	61.4	75.1	73.7	69.2	67.1	65.0	63.8	62.1	61.8	61.5	64.3	0.0	64.3
	10	64.0	72.8	59.5	72.1	71.3	68.6	67.2	64.6	62.4	60.2	59.9	59.6	64.0	0.0	64.0
	11	63.5	72.5	59.9	71.9	71.2	69.7	69.1	65.4	62.9	60.8	60.3	60.0	63.5	0.0	63.5
	12	63.1	74.9	57.6	73.8	72.3	68.8	67.1	63.1	60.7	58.4	58.1	57.7	63.1	0.0	63.1
	13	62.0	73.6	56.1	73.1	72.1	69.7	68.4	66.8	62.8	57.0	56.5	56.2	62.0	0.0	62.0
	14	61.3	68.0	56.9	67.4	66.8	65.5	64.5	62.0	59.8	57.6	57.3	57.0	61.3	0.0	61.3
	15	63.2	71.6	59.0	70.7	69.6	67.7	66.6	63.5	61.5	59.7	59.4	59.1	63.2	0.0	63.2
	16	60.2	68.4	56.2	67.4	66.4	64.4	63.3	60.5	58.5	56.7	56.6	56.3	60.2	0.0	60.2
	17	64.9	71.2	63.3	70.8	70.3	69.1	68.7	67.8	66.3	63.9	63.7	63.4	64.9	0.0	64.9
	18	57.6	66.2	53.1	65.4	64.6	62.5	61.2	57.6	55.4	53.9	53.7	53.3	57.6	0.0	57.6
	19	59.6	69.0	53.3	68.3	67.3	64.9	63.5	59.7	57.2	54.6	54.1	53.5	59.6	5.0	64.6
	20	59.9	68.8	53.7	68.3	67.3	65.8	64.7	59.6	56.6	54.3	54.0	53.8	59.9	5.0	64.9
	21	66.8	74.5	64.0	73.8	72.8	70.6	69.7	66.9	65.2	64.3	64.2	64.1	66.8	5.0	71.8
Night	22	62.8	71.1	61.2	70.7	69.9	68.4	67.0	63.3	62.3	61.5	61.4	61.2	62.8	10.0	72.8
	23	55.5	66.8	49.3	66.2	65.0	60.5	58.2	54.6	52.2	50.0	49.6	49.4	55.5	10.0	65.5

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	57.6	66.2	53.1	65.4	64.6	62.5	61.2	57.6	55.4	53.9	53.7	53.3
	Max	66.8	76.0	64.0	75.1	73.7	70.6	69.7	67.8	66.3	64.3	64.2	64.1
Energy Average		63.0	Average:		70.7	69.7	67.5	66.3	63.3	61.0	58.8	58.5	58.2
Night	Min	50.9	56.7	46.5	56.3	55.9	55.0	54.3	52.1	49.4	47.1	46.9	46.6
	Max	62.8	73.1	61.2	72.3	71.2	68.8	67.6	63.6	62.3	61.5	61.4	61.2
Energy Average		58.8	Average:		66.4	65.4	62.7	61.1	57.6	55.3	53.0	52.8	52.5

L_{eq} (dBA)

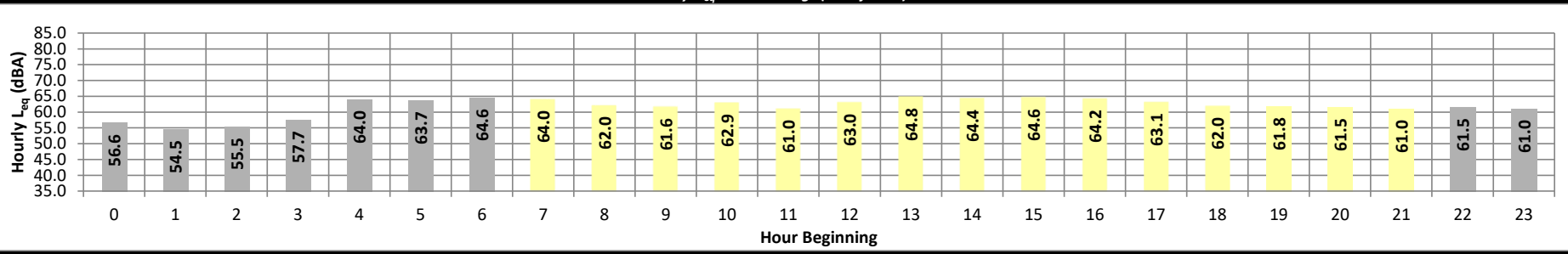
24-Hour (CNEL)	Daytime (7am-10pm)	Nighttime (10pm-7am)
66.7	**63.0**	**58.8**

24-Hour Noise Level Measurement Summary

Date: Wednesday, July 21, 2021 *Location:* L2 - Located east of the Project site near Val Verde Regional *Meter:* Piccolo II *JN:* 13998

Project: Ramona Expressway *Source:* Learning Center at 3710 Webster Avenue. *Analyst:* A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	56.6	67.5	49.1	67.2	66.6	64.3	61.7	53.3	51.5	49.9	49.6	49.2	56.6	10.0	66.6
	1	54.5	65.7	47.5	65.3	64.7	62.2	59.2	51.0	49.8	48.3	48.0	47.6	54.5	10.0	64.5
	2	55.5	65.8	49.1	65.3	64.7	62.5	60.4	53.3	51.3	49.8	49.5	49.2	55.5	10.0	65.5
	3	57.7	68.0	49.8	67.6	67.2	65.3	63.0	55.4	52.2	50.4	50.2	49.9	57.7	10.0	67.7
	4	64.0	73.6	52.5	73.3	72.8	70.9	69.3	65.2	59.9	53.7	53.0	52.6	64.0	10.0	74.0
	5	63.7	73.4	55.8	73.1	72.5	70.5	68.8	63.2	58.5	56.3	56.1	55.9	63.7	10.0	73.7
	6	64.6	75.9	56.0	75.6	75.0	72.8	71.0	65.1	60.2	56.7	56.4	56.1	64.6	10.0	74.6
Day	7	64.0	75.2	50.8	74.8	74.2	71.6	69.7	64.1	57.8	51.8	51.3	50.9	64.0	0.0	64.0
	8	62.0	75.5	47.9	74.5	73.4	70.4	68.4	61.4	54.0	48.8	48.4	48.0	62.0	0.0	62.0
	9	61.6	72.4	44.4	72.1	71.6	69.5	67.5	60.1	51.8	45.3	44.8	44.5	61.6	0.0	61.6
	10	62.9	73.8	52.6	73.3	72.7	70.3	68.4	62.2	57.5	53.7	53.2	52.7	62.9	0.0	62.9
	11	61.0	71.4	49.1	71.1	70.4	68.3	66.5	60.1	54.2	50.3	49.8	49.2	61.0	0.0	61.0
	12	63.0	73.6	56.1	73.2	72.6	70.1	68.0	62.5	58.5	56.5	56.3	56.1	63.0	0.0	63.0
	13	64.8	74.2	53.2	73.8	73.2	71.2	69.5	65.3	60.7	54.4	53.8	53.3	64.8	0.0	64.8
	14	64.4	73.9	54.2	73.5	72.9	70.9	69.6	65.4	60.6	55.1	54.7	54.3	64.4	0.0	64.4
	15	64.6	78.1	54.4	77.5	76.5	74.9	73.1	66.0	60.5	55.3	54.9	54.5	64.6	0.0	64.6
	16	64.2	74.2	55.5	73.8	73.3	71.3	69.7	64.6	60.0	56.2	55.8	55.6	64.2	0.0	64.2
	17	63.1	72.5	55.1	72.1	71.7	69.8	68.4	63.0	57.9	55.7	55.4	55.2	63.1	0.0	63.1
	18	62.0	71.9	54.2	71.6	71.1	69.1	67.2	60.8	56.7	54.9	54.7	54.4	62.0	0.0	62.0
	19	61.8	71.3	54.2	70.9	70.4	68.3	66.8	61.5	57.1	54.9	54.6	54.4	61.8	5.0	66.8
	20	61.5	72.1	53.5	71.7	71.1	68.8	66.7	61.0	56.4	54.1	53.9	53.6	61.5	5.0	66.5
	21	61.0	71.2	53.4	70.9	70.4	68.2	66.3	61.0	57.1	54.1	53.8	53.5	61.0	5.0	66.0
Night	22	61.5	70.9	52.9	70.5	70.0	68.1	67.0	62.3	57.6	53.8	53.5	53.1	61.5	10.0	71.5
	23	61.0	70.2	49.8	69.9	69.3	67.6	66.3	61.2	56.4	50.7	50.3	49.9	61.0	10.0	71.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	61.0	71.2	44.4	70.9	70.4	68.2	66.3	60.1	51.8	45.3	44.8	44.5
	Max	64.8	78.1	56.1	77.5	76.5	74.9	73.1	66.0	60.7	56.5	56.3	56.1
Energy Average		63.0	Average:		73.0	72.4	70.2	68.4	62.6	57.4	53.4	53.0	52.7
Night	Min	54.5	65.7	47.5	65.3	64.7	62.2	59.2	51.0	49.8	48.3	48.0	47.6
	Max	64.6	75.9	56.0	75.6	75.0	72.8	71.0	65.2	60.2	56.7	56.4	56.1
Energy Average		61.3	Average:		69.7	69.2	67.1	65.2	58.9	55.3	52.2	51.8	51.5

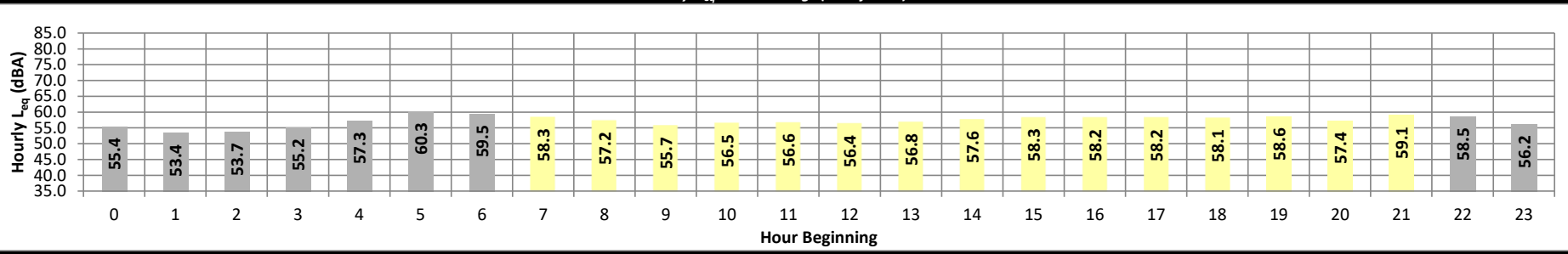
L_{eq} (dBA)		
24-Hour (CNEL)	*Daytime (7am-10pm)*	*Nighttime (10pm-7am)*
68.2	**63.0**	**61.3**

24-Hour Noise Level Measurement Summary

Date: Wednesday, July 21, 2021 *Location:* L3 - Located south of the Project site near Val Verde High *Meter:* Piccolo II *JN:* 13998

Project: Ramona Expressway *Source:* School at 972 Morgan Street. *Analyst:* A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	55.4	64.0	47.8	63.5	63.1	61.3	60.2	55.0	53.0	49.5	48.8	47.9	55.4	10.0	65.4
	1	53.4	60.3	46.1	60.0	59.4	58.1	57.0	54.4	52.0	47.6	46.7	46.2	53.4	10.0	63.4
	2	53.7	60.6	47.2	60.2	59.8	58.1	57.3	54.4	52.4	48.8	47.9	47.4	53.7	10.0	63.7
	3	55.2	60.7	50.1	60.4	59.9	58.7	58.0	56.1	54.3	51.6	51.0	50.3	55.2	10.0	65.2
	4	57.3	62.5	53.1	62.1	61.6	60.5	59.8	58.0	56.7	54.4	53.8	53.2	57.3	10.0	67.3
	5	60.3	66.9	56.5	66.4	65.8	64.6	63.5	60.6	59.0	57.4	57.0	56.6	60.3	10.0	70.3
	6	59.5	64.4	56.4	64.0	63.4	62.2	61.5	60.0	58.9	57.3	56.9	56.5	59.5	10.0	69.5
Day	7	58.3	64.4	54.9	64.0	63.3	62.0	61.1	58.7	57.4	55.7	55.4	55.0	58.3	0.0	58.3
	8	57.2	63.8	53.5	63.3	62.7	60.9	60.0	57.7	56.2	54.4	54.0	53.6	57.2	0.0	57.2
	9	55.7	61.7	51.7	61.1	60.5	59.2	58.2	56.2	55.0	52.8	52.3	51.8	55.7	0.0	55.7
	10	56.5	63.7	52.1	62.9	62.1	60.6	59.2	56.9	55.3	53.1	52.7	52.2	56.5	0.0	56.5
	11	56.6	62.3	53.3	61.9	61.3	60.0	59.2	57.1	55.7	54.1	53.7	53.4	56.6	0.0	56.6
	12	56.4	62.0	52.8	61.6	61.1	60.0	59.0	56.8	55.6	53.7	53.3	52.9	56.4	0.0	56.4
	13	56.8	61.8	53.4	61.5	61.1	60.2	59.4	57.5	56.1	54.2	53.9	53.5	56.8	0.0	56.8
	14	57.6	63.2	53.6	62.8	62.4	61.5	60.9	57.9	56.6	54.6	54.1	53.7	57.6	0.0	57.6
	15	58.3	65.0	53.7	64.7	64.2	62.6	61.7	58.6	56.8	54.8	54.3	53.9	58.3	0.0	58.3
	16	58.2	64.0	54.5	63.7	63.2	61.8	60.8	58.7	57.5	55.4	55.0	54.6	58.2	0.0	58.2
	17	58.2	63.1	54.5	62.7	62.4	61.2	60.5	58.8	57.6	55.6	55.2	54.7	58.2	0.0	58.2
	18	58.1	62.8	54.5	62.5	62.1	61.1	60.4	58.8	57.5	55.6	55.1	54.6	58.1	0.0	58.1
	19	58.6	63.5	54.5	63.3	62.9	61.9	61.2	59.2	58.0	55.7	55.2	54.7	58.6	5.0	63.6
	20	57.4	62.2	53.9	61.9	61.5	60.4	59.7	57.9	56.7	55.0	54.6	54.1	57.4	5.0	62.4
	21	59.1	64.6	54.8	64.3	63.9	62.7	61.8	59.7	58.2	56.0	55.5	55.0	59.1	5.0	64.1
Night	22	58.5	64.0	54.1	63.7	63.2	62.2	61.5	59.2	57.7	55.3	54.7	54.2	58.5	10.0	68.5
	23	56.2	62.7	50.7	62.3	61.9	60.7	59.6	56.7	54.9	51.9	51.3	50.8	56.2	10.0	66.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	55.7	61.7	51.7	61.1	60.5	59.2	58.2	56.2	55.0	52.8	52.3	51.8
	Max	59.1	65.0	54.9	64.7	64.2	62.7	61.8	59.7	58.2	56.0	55.5	55.0
Energy Average		57.6	Average:		62.8	62.3	61.1	60.2	58.0	56.7	54.7	54.3	53.8
Night	Min	53.4	60.3	46.1	60.0	59.4	58.1	57.0	54.4	52.0	47.6	46.7	46.2
	Max	60.3	66.9	56.5	66.4	65.8	64.6	63.5	60.6	59.0	57.4	57.0	56.6
Energy Average		57.2	Average:		62.5	62.0	60.7	59.8	57.1	55.4	52.6	52.0	51.5

L_{eq} (dBA)

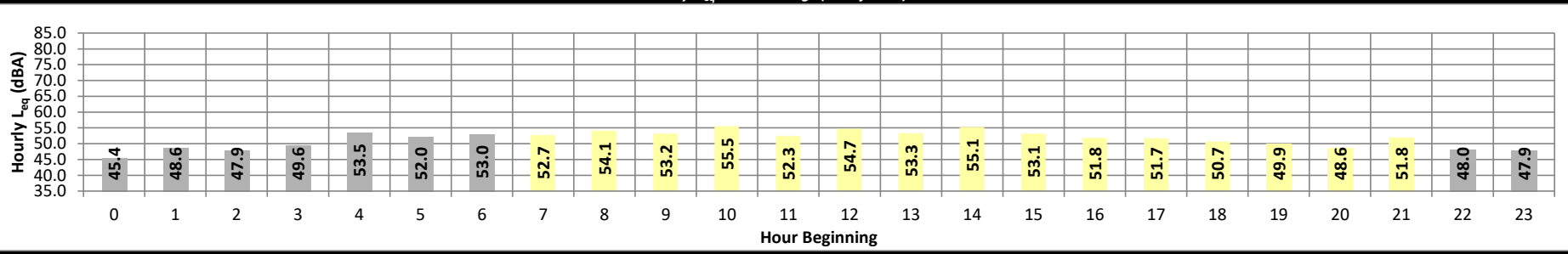
24-Hour (CNEL)	Daytime (7am-10pm)	Nighttime (10pm-7am)
64.0	**57.6**	**57.2**

24-Hour Noise Level Measurement Summary

Date: Wednesday, July 21, 2021 *Location:* L4 - Located southwest of the Project site near single-family *Meter:* Piccolo II *JN:* 13998

Project: Ramona Expressway *Source:* residence at 19543 Patterson Avenue. *Analyst:* A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	45.4	53.9	38.8	53.6	53.1	51.6	49.9	45.6	42.2	39.6	39.3	38.9	45.4	10.0	55.4
	1	48.6	59.5	38.4	59.2	58.8	56.5	54.0	46.1	42.3	39.5	39.0	38.6	48.6	10.0	58.6
	2	47.9	59.5	39.1	59.0	58.2	55.4	52.3	44.9	42.0	39.8	39.6	39.3	47.9	10.0	57.9
	3	49.6	56.6	45.0	56.3	56.0	54.8	53.4	49.6	47.8	45.8	45.5	45.2	49.6	10.0	59.6
	4	53.5	68.6	42.9	68.1	67.7	65.5	62.8	54.4	48.8	44.1	43.6	43.1	53.5	10.0	63.5
	5	52.0	62.0	46.0	61.7	61.1	58.7	56.5	50.5	48.5	46.8	46.5	46.1	52.0	10.0	62.0
	6	53.0	63.2	49.0	62.7	62.0	59.8	57.5	52.6	51.1	49.7	49.4	49.1	53.0	10.0	63.0
Day	7	52.7	61.0	47.6	60.6	60.0	57.9	56.8	52.7	50.5	48.4	48.1	47.7	52.7	0.0	52.7
	8	54.1	70.3	46.3	69.1	66.6	62.3	59.7	53.3	49.4	47.2	46.8	46.5	54.1	0.0	54.1
	9	53.2	63.7	45.1	63.2	62.4	59.7	57.8	51.9	48.9	46.0	45.6	45.3	53.2	0.0	53.2
	10	55.5	65.8	45.5	65.4	64.8	62.4	60.1	54.6	51.0	47.1	46.5	45.7	55.5	0.0	55.5
	11	52.3	69.2	43.6	68.8	68.0	65.2	62.0	52.2	47.6	44.6	44.2	43.7	52.3	0.0	52.3
	12	54.7	66.2	45.8	65.5	64.4	62.6	61.0	53.2	49.9	46.8	46.4	45.9	54.7	0.0	54.7
	13	53.3	65.8	46.3	65.3	64.6	62.0	60.1	54.1	51.1	47.5	46.9	46.4	53.3	0.0	53.3
	14	55.1	68.4	45.9	67.9	66.9	63.0	60.0	52.9	49.8	47.1	46.6	46.1	55.1	0.0	55.1
	15	53.1	65.6	45.0	65.2	64.4	61.3	58.5	51.7	49.0	46.1	45.6	45.1	53.1	0.0	53.1
	16	51.8	62.2	44.7	61.7	61.0	58.4	56.5	50.2	47.9	45.7	45.3	44.8	51.8	0.0	51.8
	17	51.7	62.5	45.4	62.1	61.4	59.0	56.8	51.9	48.8	46.4	45.9	45.5	51.7	0.0	51.7
	18	50.7	59.8	44.6	59.2	58.6	56.7	54.6	50.3	48.2	45.7	45.2	44.8	50.7	0.0	50.7
	19	49.9	62.3	44.3	61.9	61.4	59.5	56.9	53.4	49.9	45.4	44.9	44.5	49.9	5.0	54.9
	20	48.6	56.6	43.3	56.2	55.6	53.7	52.3	48.9	46.6	44.1	43.8	43.5	48.6	5.0	53.6
	21	51.8	59.9	44.2	59.6	59.1	57.5	56.1	52.4	49.4	45.5	44.9	44.4	51.8	5.0	56.8
Night	22	48.0	57.7	41.4	57.2	56.5	54.6	52.6	47.1	44.6	42.1	41.8	41.5	48.0	10.0	58.0
	23	47.9	58.5	41.0	57.9	57.2	54.8	52.6	46.1	43.7	41.8	41.5	41.1	47.9	10.0	57.9

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	48.6	56.6	43.3	56.2	55.6	53.7	52.3	48.9	46.6	44.1	43.8	43.5
	Max	55.5	70.3	47.6	69.1	68.0	65.2	62.0	54.6	51.1	48.4	48.1	47.7
Energy Average		52.9	Average:		63.5	62.6	60.1	57.9	52.3	49.2	46.2	45.8	45.3
Night	Min	45.4	53.9	38.4	53.6	53.1	51.6	49.9	44.9	42.0	39.5	39.0	38.6
	Max	53.5	68.6	49.0	68.1	67.7	65.5	62.8	54.4	51.1	49.7	49.4	49.1
Energy Average		50.3	Average:		59.5	59.0	56.9	54.6	48.5	45.7	43.2	42.9	42.6

L_{eq} (dBA)		
24-Hour (CNEL)	Daytime (7am-10pm)	Nighttime (10pm-7am)
57.4	**52.9**	**50.3**

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS

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

Scenario: E
Road Name: Nevada Rd.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,797 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	479 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	34 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	33.0 feet
Centerline Dist. to Observer:	33.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	28.723
Medium Trucks:	28.413
Heavy Trucks:	28.443

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.47	3.51	-1.20	-4.52	0.000	0.000
Medium Trucks:	79.45	-17.59	3.58	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-19.05	3.57	-1.20	-5.69	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.6	62.9	59.3	66.9	67.3
Medium Trucks:	64.2	63.7	59.4	58.7	66.1	66.3
Heavy Trucks:	67.6	66.1	65.1	64.0	70.7	71.0
Vehicle Noise:	70.7	69.7	67.8	66.1	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	56	122	262	565

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

Scenario: E+P
Road Name: Nevada Rd.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,057 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	568 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	34 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	33.0 feet
Centerline Dist. to Observer:	33.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.9%	12.2%	15.9%	87.27%
Medium Trucks:	75.3%	7.0%	17.7%	4.84%
Heavy Trucks:	60.4%	12.0%	27.6%	7.89%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	28.723
Medium Trucks:	28.413
Heavy Trucks:	28.443

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.89	3.51	-1.20	-4.52	0.000	0.000
Medium Trucks:	79.45	-17.45	3.58	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-15.32	3.57	-1.20	-5.69	0.000	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	65.2	63.5	59.9	67.5	67.9
Medium Trucks:	64.4	63.9	59.6	58.8	66.2	66.5
Heavy Trucks:	71.3	69.8	68.8	67.7	74.4	74.8
Vehicle Noise:	73.0	71.9	70.3	68.8	75.7	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	84	181	389	838

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

Scenario: EAC 2024
Road Name: Nevada Rd.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,211 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	508 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	34 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	33.0 feet
Centerline Dist. to Observer:	33.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	28.723
Medium Trucks:	28.413
Heavy Trucks:	28.443

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.21	3.51	-1.20	-4.52	0.000	0.000
Medium Trucks:	79.45	-17.33	3.58	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-18.79	3.57	-1.20	-5.69	0.000	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	64.9	63.2	59.5	67.1	67.6
Medium Trucks:	64.5	64.0	59.7	58.9	66.3	66.6
Heavy Trucks:	67.8	66.4	65.4	64.2	71.0	71.3
Vehicle Noise:	71.0	70.0	68.1	66.4	73.4	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	558
CNEL:	59	127	273	587

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

Scenario: EAPC 2024
Road Name: Nevada Rd.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,471 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	597 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	34 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	33.0 feet
Centerline Dist. to Observer:	33.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.9%	12.2%	15.9%	87.43%
Medium Trucks:	75.3%	7.0%	17.7%	4.87%
Heavy Trucks:	60.4%	12.0%	27.6%	7.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	28.723
Medium Trucks:	28.413
Heavy Trucks:	28.443

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.66	3.51	-1.20	-4.52	0.000	0.000
Medium Trucks:	79.45	-17.20	3.58	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-15.21	3.57	-1.20	-5.69	0.000	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	65.4	63.7	60.1	67.7	68.1
Medium Trucks:	64.6	64.1	59.8	59.1	66.5	66.7
Heavy Trucks:	71.4	69.9	68.9	67.8	74.6	74.9
Vehicle Noise:	73.2	72.0	70.5	69.0	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	378	815
CNEL:	86	185	398	857

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Nevada Rd. | *Job Number:* 13998
Road Segment: n/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,515 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	741 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	34 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	33.0 feet
Centerline Dist. to Observer:	33.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	28.723
Medium Trucks:	28.413
Heavy Trucks:	28.443

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-3.57	3.51	-1.20	*-4.52*	0.000	0.000
Medium Trucks:	79.45	-15.69	3.58	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-17.15	3.57	-1.20	*-5.69*	0.000	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	66.5	64.8	61.2	68.8	69.2
Medium Trucks:	66.1	65.6	61.3	60.6	68.0	68.2
Heavy Trucks:	69.5	68.0	67.0	65.9	72.6	72.9
Vehicle Noise:	72.6	71.6	69.7	68.0	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	72	155	333	718
CNEL:	76	163	351	755

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Nevada Rd. | *Job Number:* 13998
Road Segment: n/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,774 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	830 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	34 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	33.0 feet
Centerline Dist. to Observer:	33.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.9%	12.2%	15.9%	88.28%
Medium Trucks:	75.3%	7.0%	17.7%	5.06%
Heavy Trucks:	60.4%	12.0%	27.6%	6.65%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	28.723
Medium Trucks:	28.413
Heavy Trucks:	28.443

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-3.19	3.51	-1.20	*-4.52*	0.000	0.000
Medium Trucks:	79.45	-15.60	3.58	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-14.42	3.57	-1.20	*-5.69*	0.000	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	66.9	65.2	61.6	69.2	69.6
Medium Trucks:	66.2	65.7	61.4	60.7	68.1	68.3
Heavy Trucks:	72.2	70.7	69.7	68.6	75.3	75.7
Vehicle Noise:	74.2	73.1	71.5	69.9	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	95	205	441	951
CNEL:	100	215	464	1,000

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

Scenario: E | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,699 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	613 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	64.30	-3.31	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-15.42	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-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:	61.5	60.8	59.1	55.5	63.0	63.5
Medium Trucks:	60.8	60.3	56.0	55.3	62.7	62.9
Heavy Trucks:	65.2	63.7	62.7	61.6	68.3	68.6
Vehicle Noise:	67.7	66.7	64.9	63.3	70.3	70.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	49	106	228	491
CNEL:	52	111	240	516

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

Scenario: E+P | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,033 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	637 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:	71.9%	12.2%	15.9%	90.83%
Medium Trucks:	75.3%	7.0%	17.7%	5.35%
Heavy Trucks:	60.4%	12.0%	27.6%	3.82%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-3.13	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-15.42	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-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:	61.6	60.9	59.3	55.6	63.2	63.7
Medium Trucks:	60.8	60.3	56.0	55.3	62.7	62.9
Heavy Trucks:	65.2	63.7	62.7	61.6	68.3	68.6
Vehicle Noise:	67.8	66.7	64.9	63.3	70.3	70.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	49	106	229	494
CNEL:	52	112	241	519

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

Scenario: EAC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,588 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	676 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	64.30	-2.88	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-15.00	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-16.46	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:	61.9	61.2	59.5	55.9	63.5	63.9
Medium Trucks:	61.3	60.8	56.4	55.7	63.1	63.4
Heavy Trucks:	65.6	64.2	63.1	62.0	68.8	69.1
Vehicle Noise:	68.1	67.1	65.3	63.7	70.7	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	52	113	243	524
CNEL:	55	119	256	551

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

Scenario: EAPC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,922 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	699 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:	71.9%	12.2%	15.9%	90.79%
Medium Trucks:	75.3%	7.0%	17.7%	5.37%
Heavy Trucks:	60.4%	12.0%	27.6%	3.84%

Noise Source 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	-2.72	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-15.00	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-16.46	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:	62.1	61.3	59.7	56.0	63.6	64.1
Medium Trucks:	61.3	60.8	56.4	55.7	63.1	63.4
Heavy Trucks:	65.6	64.2	63.1	62.0	68.8	69.1
Vehicle Noise:	68.2	67.1	65.4	63.7	70.7	71.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	53	113	244	527
CNEL:	55	119	257	554

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,011 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	1,763 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	64.30	1.28	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-10.84	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-12.30	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	63.7	60.0	67.6	68.1
Medium Trucks:	65.4	64.9	60.6	59.9	67.3	67.5
Heavy Trucks:	69.8	68.3	67.3	66.2	72.9	73.2
Vehicle Noise:	72.3	71.2	69.5	67.9	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	99	214	461	993
CNEL:	104	225	485	1,044

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,345 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	1,786 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:	71.9%	12.2%	15.9%	90.60%
Medium Trucks:	75.3%	7.0%	17.7%	5.48%
Heavy Trucks:	60.4%	12.0%	27.6%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.34	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-10.84	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-12.30	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	65.4	63.7	60.1	67.7	68.1
Medium Trucks:	65.4	64.9	60.6	59.9	67.3	67.5
Heavy Trucks:	69.8	68.3	67.3	66.2	72.9	73.2
Vehicle Noise:	72.3	71.3	69.5	67.9	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	100	214	462	995
CNEL:	105	225	486	1,046

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

Scenario: E
Road Name: Webster Av.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,811 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	339 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	64.30	-5.88	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-18.00	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-19.46	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:	58.9	58.2	56.5	52.9	60.5	60.9
Medium Trucks:	58.3	57.8	53.4	52.7	60.1	60.4
Heavy Trucks:	62.6	61.2	60.1	59.0	65.8	66.1
Vehicle Noise:	65.1	64.1	62.3	60.7	67.7	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	35	75	161	348

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

Scenario: E+P
Road Name: Webster Av.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,210 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	367 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:	71.9%	12.2%	15.9%	91.20%
Medium Trucks:	75.3%	7.0%	17.7%	5.13%
Heavy Trucks:	60.4%	12.0%	27.6%	3.67%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
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	-5.50	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-18.00	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-19.46	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:	59.3	58.6	56.9	53.3	60.9	61.3
Medium Trucks:	58.3	57.8	53.4	52.7	60.1	60.4
Heavy Trucks:	62.6	61.2	60.1	59.0	65.8	66.1
Vehicle Noise:	65.2	64.2	62.4	60.8	67.8	68.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	335
CNEL:	35	76	163	352

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

Scenario: EAC 2024
Road Name: Webster Av.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,388 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	380 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	64.30	-5.39	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-17.50	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-18.96	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:	59.4	58.7	57.0	53.4	61.0	61.4
Medium Trucks:	58.8	58.3	53.9	53.2	60.6	60.9
Heavy Trucks:	63.1	61.6	60.6	59.5	66.3	66.6
Vehicle Noise:	65.6	64.6	62.8	61.2	68.2	68.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	81	174	375

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

Scenario: EAPC 2024
Road Name: Webster Av.
Road Segment: n/o Morgan St.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,787 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	408 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:	71.9%	12.2%	15.9%	91.13%
Medium Trucks:	75.3%	7.0%	17.7%	5.17%
Heavy Trucks:	60.4%	12.0%	27.6%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-5.04	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-17.50	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-18.96	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:	59.7	59.0	57.3	53.7	61.3	61.8
Medium Trucks:	58.8	58.3	53.9	53.2	60.6	60.9
Heavy Trucks:	63.1	61.6	60.6	59.5	66.3	66.6
Vehicle Noise:	65.7	64.7	62.9	61.3	68.3	68.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	167	361
CNEL:	38	82	176	379

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,725 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	544 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	64.30	-3.82	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-15.94	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-17.40	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:	61.0	60.2	58.6	54.9	62.5	63.0
Medium Trucks:	60.3	59.8	55.5	54.8	62.2	62.4
Heavy Trucks:	64.7	63.2	62.2	61.1	67.8	68.1
Vehicle Noise:	67.2	66.1	64.4	62.8	69.8	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	45	98	211	454
CNEL:	48	103	221	477

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Webster Av. | *Job Number:* 13998
Road Segment: n/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,125 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	573 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:	71.9%	12.2%	15.9%	90.94%
Medium Trucks:	75.3%	7.0%	17.7%	5.28%
Heavy Trucks:	60.4%	12.0%	27.6%	3.78%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-3.58	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	75.75	-15.94	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-17.40	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:	61.2	60.5	58.8	55.2	62.8	63.2
Medium Trucks:	60.3	59.8	55.5	54.8	62.2	62.4
Heavy Trucks:	64.7	63.2	62.2	61.1	67.8	68.1
Vehicle Noise:	67.3	66.2	64.4	62.8	69.8	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	46	98	212	457
CNEL:	48	104	223	481

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

Scenario: E | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,451 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	666 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-4.04	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-16.16	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.61	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:	64.9	64.2	62.5	58.9	66.5	66.9
Medium Trucks:	63.8	63.3	59.0	58.3	65.7	65.9
Heavy Trucks:	67.1	65.7	64.7	63.5	70.3	70.6
Vehicle Noise:	70.3	69.3	67.4	65.7	72.7	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	72	154	332	716
CNEL:	75	162	350	753

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

Scenario: E+P | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,851 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	694 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:	71.9%	12.2%	15.9%	90.86%
Medium Trucks:	75.3%	7.0%	17.7%	5.33%
Heavy Trucks:	60.4%	12.0%	27.6%	3.81%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-3.84	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-16.16	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.61	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:	65.1	64.4	62.7	59.1	66.7	67.1
Medium Trucks:	63.8	63.3	59.0	58.3	65.7	65.9
Heavy Trucks:	67.1	65.7	64.7	63.5	70.3	70.6
Vehicle Noise:	70.3	69.3	67.5	65.7	72.8	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	72	155	335	721
CNEL:	76	163	352	759

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

Scenario: EAC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,362 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	730 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-3.64	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-15.76	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.21	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:	65.3	64.6	62.9	59.3	66.9	67.3
Medium Trucks:	64.2	63.7	59.4	58.7	66.1	66.3
Heavy Trucks:	67.5	66.1	65.1	63.9	70.7	71.0
Vehicle Noise:	70.7	69.7	67.8	66.1	73.1	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	76	164	353	761
CNEL:	80	173	372	801

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

Scenario: EAPC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,762 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	758 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:	71.9%	12.2%	15.9%	90.83%
Medium Trucks:	75.3%	7.0%	17.7%	5.35%
Heavy Trucks:	60.4%	12.0%	27.6%	3.82%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-3.46	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-15.76	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.21	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:	65.5	64.8	63.1	59.5	67.0	67.5
Medium Trucks:	64.2	63.7	59.4	58.7	66.1	66.3
Heavy Trucks:	67.5	66.1	65.1	63.9	70.7	71.0
Vehicle Noise:	70.7	69.7	67.9	66.1	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	77	165	356	766
CNEL:	81	174	374	806

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,955 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	1,054 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-2.04	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-14.16	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.62	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	66.2	64.5	60.9	68.5	68.9
Medium Trucks:	65.8	65.3	61.0	60.2	67.6	67.9
Heavy Trucks:	69.1	67.7	66.7	65.5	72.3	72.6
Vehicle Noise:	72.3	71.3	69.4	67.7	74.7	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	97	209	451	972
CNEL:	102	220	475	1,023

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,355 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	1,082 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:	71.9%	12.2%	15.9%	90.72%
Medium Trucks:	75.3%	7.0%	17.7%	5.41%
Heavy Trucks:	60.4%	12.0%	27.6%	3.87%

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:	68.46	-1.92	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-14.16	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.62	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	66.3	64.6	61.0	68.6	69.0
Medium Trucks:	65.8	65.3	61.0	60.2	67.6	67.9
Heavy Trucks:	69.1	67.7	66.7	65.5	72.3	72.6
Vehicle Noise:	72.3	71.3	69.4	67.7	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	98	210	453	977
CNEL:	103	221	477	1,028

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

Scenario: E
Road Name: Indian Av.
Road Segment: n/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,352 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	659 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-4.08	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-16.20	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.66	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:	64.8	64.1	62.5	58.8	66.4	66.9
Medium Trucks:	63.8	63.3	58.9	58.2	65.6	65.9
Heavy Trucks:	67.1	65.6	64.6	63.5	70.2	70.6
Vehicle Noise:	70.2	69.2	67.4	65.6	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	71	153	330	711
CNEL:	75	161	347	748

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

Scenario: E+P
Road Name: Indian Av.
Road Segment: n/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,608 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	677 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:	71.9%	12.2%	15.9%	90.73%
Medium Trucks:	75.3%	7.0%	17.7%	5.41%
Heavy Trucks:	60.4%	12.0%	27.6%	3.86%

Noise Source 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	-3.95	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-16.20	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.66	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:	65.0	64.3	62.6	59.0	66.6	67.0
Medium Trucks:	63.8	63.3	58.9	58.2	65.6	65.9
Heavy Trucks:	67.1	65.6	64.6	63.5	70.2	70.6
Vehicle Noise:	70.3	69.3	67.4	65.7	72.7	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	71	154	332	714
CNEL:	75	162	349	752

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

Scenario: EAC 2024
Road Name: Indian Av.
Road Segment: n/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,549 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	743 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-3.56	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-15.68	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.14	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:	65.4	64.7	63.0	59.4	66.9	67.4
Medium Trucks:	64.3	63.8	59.5	58.7	66.1	66.4
Heavy Trucks:	67.6	66.2	65.2	64.0	70.8	71.1
Vehicle Noise:	70.8	69.8	67.9	66.2	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	77	166	358	770
CNEL:	81	175	376	810

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

Scenario: EAPC 2024
Road Name: Indian Av.
Road Segment: n/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,805 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	761 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:	71.9%	12.2%	15.9%	90.70%
Medium Trucks:	75.3%	7.0%	17.7%	5.42%
Heavy Trucks:	60.4%	12.0%	27.6%	3.88%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-3.45	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-15.68	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.14	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:	65.5	64.8	63.1	59.5	67.1	67.5
Medium Trucks:	64.3	63.8	59.5	58.7	66.1	66.4
Heavy Trucks:	67.6	66.2	65.2	64.0	70.8	71.1
Vehicle Noise:	70.8	69.8	67.9	66.2	73.2	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	77	167	359	774
CNEL:	81	175	378	814

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,093 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	1,064 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-2.00	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-14.12	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.58	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	66.2	64.5	60.9	68.5	69.0
Medium Trucks:	65.8	65.3	61.0	60.3	67.7	67.9
Heavy Trucks:	69.2	67.7	66.7	65.6	72.3	72.6
Vehicle Noise:	72.3	71.3	69.4	67.7	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	98	211	454	978
CNEL:	103	222	478	1,029

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Indian Av. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,350 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	1,082 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:	71.9%	12.2%	15.9%	90.63%
Medium Trucks:	75.3%	7.0%	17.7%	5.46%
Heavy Trucks:	60.4%	12.0%	27.6%	3.90%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.92	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-14.12	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.58	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	66.3	64.6	61.0	68.6	69.0
Medium Trucks:	65.8	65.3	61.0	60.3	67.7	67.9
Heavy Trucks:	69.2	67.7	66.7	65.6	72.3	72.6
Vehicle Noise:	72.3	71.3	69.5	67.7	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	98	211	455	981
CNEL:	103	222	479	1,032

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

Scenario: E | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,680 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,162 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	1.08	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-11.04	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.50	-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:	68.2	67.5	65.8	62.2	69.8	70.2
Medium Trucks:	67.1	66.6	62.3	61.6	69.0	69.2
Heavy Trucks:	70.4	69.0	68.0	66.8	73.6	73.9
Vehicle Noise:	73.6	72.6	70.7	69.0	76.0	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	162	349	751	1,618
CNEL:	170	367	790	1,702

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

Scenario: E+P | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,206 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,199 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:	71.9%	12.2%	15.9%	90.63%
Medium Trucks:	75.3%	7.0%	17.7%	5.46%
Heavy Trucks:	60.4%	12.0%	27.6%	3.90%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
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	1.16	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-11.04	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.50	-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:	68.3	67.6	65.9	62.3	69.9	70.3
Medium Trucks:	67.1	66.6	62.3	61.6	69.0	69.2
Heavy Trucks:	70.4	69.0	68.0	66.8	73.6	73.9
Vehicle Noise:	73.6	72.6	70.7	69.0	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	162	350	753	1,623
CNEL:	171	368	793	1,707

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

Scenario: EAC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,555 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,365 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	1.47	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-10.65	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.11	-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:	68.6	67.9	66.2	62.6	70.2	70.6
Medium Trucks:	67.5	67.0	62.7	61.9	69.3	69.6
Heavy Trucks:	70.8	69.4	68.4	67.2	74.0	74.3
Vehicle Noise:	74.0	73.0	71.1	69.4	76.4	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	172	370	797	1,717
CNEL:	181	389	839	1,807

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

Scenario: EAPC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,082 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,402 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:	71.9%	12.2%	15.9%	90.62%
Medium Trucks:	75.3%	7.0%	17.7%	5.47%
Heavy Trucks:	60.4%	12.0%	27.6%	3.91%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.54	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-10.65	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.11	-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:	68.7	68.0	66.3	62.7	70.2	70.7
Medium Trucks:	67.5	67.0	62.7	61.9	69.3	69.6
Heavy Trucks:	70.8	69.4	68.4	67.2	74.0	74.3
Vehicle Noise:	74.0	73.0	71.1	69.4	76.4	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	172	371	799	1,722
CNEL:	181	390	841	1,812

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,465 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,415 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	3.06	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-9.06	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.51	-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:	70.2	69.5	67.8	64.2	71.8	72.2
Medium Trucks:	69.1	68.6	64.3	63.5	70.9	71.2
Heavy Trucks:	72.4	71.0	70.0	68.8	75.6	75.9
Vehicle Noise:	75.6	74.6	72.7	71.0	78.0	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	219	473	1,019	2,194
CNEL:	231	497	1,072	2,309

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: n/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,992 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,452 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:	71.9%	12.2%	15.9%	90.58%
Medium Trucks:	75.3%	7.0%	17.7%	5.50%
Heavy Trucks:	60.4%	12.0%	27.6%	3.93%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
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	3.11	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-9.06	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.51	-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:	70.2	69.5	67.9	64.2	71.8	72.3
Medium Trucks:	69.1	68.6	64.3	63.5	70.9	71.2
Heavy Trucks:	72.4	71.0	70.0	68.8	75.6	75.9
Vehicle Noise:	75.6	74.6	72.7	71.0	78.0	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	220	474	1,020	2,198
CNEL:	231	498	1,074	2,313

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

Scenario: E
Road Name: Perris Blvd.
Road Segment: s/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,530 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,081 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	0.91	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-11.21	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.67	-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	67.3	65.7	62.0	69.6	70.1
Medium Trucks:	66.9	66.4	62.1	61.4	68.8	69.0
Heavy Trucks:	70.3	68.8	67.8	66.7	73.4	73.7
Vehicle Noise:	73.4	72.4	70.5	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	158	340	732	1,577
CNEL:	166	358	770	1,659

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

Scenario: E+P
Road Name: Perris Blvd.
Road Segment: s/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,930 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,109 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:	71.9%	12.2%	15.9%	90.60%
Medium Trucks:	75.3%	7.0%	17.7%	5.48%
Heavy Trucks:	60.4%	12.0%	27.6%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
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	0.97	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-11.21	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.67	-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	67.4	65.7	62.1	69.7	70.1
Medium Trucks:	66.9	66.4	62.1	61.4	68.8	69.0
Heavy Trucks:	70.3	68.8	67.8	66.7	73.4	73.7
Vehicle Noise:	73.4	72.4	70.6	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	158	341	734	1,581
CNEL:	166	358	772	1,663

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

Scenario: EAC 2024
Road Name: Perris Blvd.
Road Segment: s/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,833 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,314 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	-10.75	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.21	-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	67.8	66.1	62.5	70.1	70.5
Medium Trucks:	67.4	66.9	62.6	61.8	69.2	69.5
Heavy Trucks:	70.7	69.3	68.3	67.1	73.9	74.2
Vehicle Noise:	73.9	72.9	71.0	69.3	76.3	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	169	365	786	1,693
CNEL:	178	384	827	1,781

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

Scenario: EAPC 2024
Road Name: Perris Blvd.
Road Segment: s/o Ramona Expy.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,233 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,342 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:	71.9%	12.2%	15.9%	90.59%
Medium Trucks:	75.3%	7.0%	17.7%	5.49%
Heavy Trucks:	60.4%	12.0%	27.6%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
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	1.43	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-10.75	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.21	-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:	68.6	67.9	66.2	62.5	70.1	70.6
Medium Trucks:	67.4	66.9	62.6	61.8	69.2	69.5
Heavy Trucks:	70.7	69.3	68.3	67.1	73.9	74.2
Vehicle Noise:	73.9	72.9	71.0	69.3	76.3	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	170	365	787	1,696
CNEL:	178	385	828	1,785

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

Scenario: HY 2045 | Project Name: Ramona Gateway Comme
Road Name: Perris Blvd. | Job Number: 13998
Road Segment: s/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,185 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,325 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	2.95	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-9.17	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.63	-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:	70.1	69.4	67.7	64.1	71.7	72.1
Medium Trucks:	69.0	68.5	64.2	63.4	70.8	71.1
Heavy Trucks:	72.3	70.9	69.8	68.7	75.5	75.8
Vehicle Noise:	75.5	74.4	72.6	70.9	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	216	464	1,001	2,156
CNEL:	227	489	1,053	2,268

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

Scenario: HYP 2045 | Project Name: Ramona Gateway Comme
Road Name: Perris Blvd. | Job Number: 13998
Road Segment: s/o Ramona Expy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,584 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,353 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:	71.9%	12.2%	15.9%	90.55%
Medium Trucks:	75.3%	7.0%	17.7%	5.51%
Heavy Trucks:	60.4%	12.0%	27.6%	3.94%

Noise Source 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	2.99	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-9.17	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.63	-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:	70.1	69.4	67.7	64.1	71.7	72.1
Medium Trucks:	69.0	68.5	64.2	63.4	70.8	71.1
Heavy Trucks:	72.3	70.9	69.8	68.7	75.5	75.8
Vehicle Noise:	75.5	74.5	72.6	70.9	77.9	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	216	465	1,002	2,159
CNEL:	227	489	1,054	2,271

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

Scenario: E | Project Name: Ramona Gateway Comme
Road Name: Perris Blvd. | Job Number: 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,573 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,084 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	0.92	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-11.20	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.66	-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:	68.0	67.3	65.7	62.0	69.6	70.1
Medium Trucks:	66.9	66.4	62.1	61.4	68.8	69.0
Heavy Trucks:	70.3	68.8	67.8	66.7	73.4	73.7
Vehicle Noise:	73.4	72.4	70.6	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	340	733	1,579
CNEL:	166	358	771	1,661

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

Scenario: E+P | Project Name: Ramona Gateway Comme
Road Name: Perris Blvd. | Job Number: 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,290 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,135 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:	71.9%	12.2%	15.9%	90.70%
Medium Trucks:	75.3%	7.0%	17.7%	5.42%
Heavy Trucks:	60.4%	12.0%	27.6%	3.88%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	50.210
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	1.03	-0.13	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-11.20	-0.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.66	-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:	68.2	67.5	65.8	62.2	69.7	70.2
Medium Trucks:	66.9	66.4	62.1	61.4	68.8	69.0
Heavy Trucks:	70.3	68.8	67.8	66.7	73.4	73.7
Vehicle Noise:	73.5	72.5	70.6	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	736	1,585
CNEL:	167	359	774	1,668

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

Scenario: EAC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,727 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,306 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	1.36	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-10.76	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.22	-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	67.8	66.1	62.5	70.1	70.5
Medium Trucks:	67.4	66.9	62.6	61.8	69.2	69.5
Heavy Trucks:	70.7	69.3	68.3	67.1	73.9	74.2
Vehicle Noise:	73.9	72.9	71.0	69.3	76.3	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	169	364	784	1,689
CNEL:	178	383	825	1,777

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

Scenario: EAPC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,444 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,357 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:	71.9%	12.2%	15.9%	90.68%
Medium Trucks:	75.3%	7.0%	17.7%	5.44%
Heavy Trucks:	60.4%	12.0%	27.6%	3.89%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.46	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-10.76	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.22	-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:	68.6	67.9	66.2	62.6	70.2	70.6
Medium Trucks:	67.4	66.9	62.6	61.8	69.2	69.5
Heavy Trucks:	70.7	69.3	68.3	67.1	73.9	74.2
Vehicle Noise:	73.9	72.9	71.0	69.3	76.3	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	170	365	787	1,695
CNEL:	178	384	828	1,784

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,099 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,319 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	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	2.94	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-9.18	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.64	-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:	70.1	69.4	67.7	64.1	71.6	72.1
Medium Trucks:	69.0	68.5	64.1	63.4	70.8	71.1
Heavy Trucks:	72.3	70.8	69.8	68.7	75.4	75.8
Vehicle Noise:	75.4	74.4	72.6	70.8	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	215	464	999	2,153
CNEL:	227	488	1,051	2,265

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Perris Blvd. | *Job Number:* 13998
Road Segment: s/o Morgan St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,816 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,370 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:	71.9%	12.2%	15.9%	90.62%
Medium Trucks:	75.3%	7.0%	17.7%	5.47%
Heavy Trucks:	60.4%	12.0%	27.6%	3.91%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.01	-0.13	-1.20	*-4.70*	0.000	0.000
Medium Trucks:	79.45	-9.18	-0.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.64	-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:	70.1	69.4	67.8	64.1	71.7	72.2
Medium Trucks:	69.0	68.5	64.1	63.4	70.8	71.1
Heavy Trucks:	72.3	70.8	69.8	68.7	75.4	75.8
Vehicle Noise:	75.5	74.5	72.6	70.9	77.9	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	216	465	1,002	2,159
CNEL:	227	489	1,054	2,271

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

Scenario: E | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: w/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,339 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,336 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.09	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-10.03	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.49	-2.11	-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:	70.5	69.8	68.2	64.5	72.1	72.6
Medium Trucks:	69.1	68.6	64.3	63.5	70.9	71.2
Heavy Trucks:	71.6	70.1	69.1	68.0	74.7	75.1
Vehicle Noise:	75.3	74.3	72.4	70.6	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	298	643	1,386	2,985
CNEL:	314	677	1,459	3,143

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

Scenario: E+P | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: w/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,736 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,646 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	91.28%
Medium Trucks:	75.3%	7.0%	17.7%	5.08%
Heavy Trucks:	60.4%	12.0%	27.6%	3.63%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.51	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-10.03	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.49	-2.11	-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:	71.0	70.3	68.6	65.0	72.5	73.0
Medium Trucks:	69.1	68.6	64.3	63.5	70.9	71.2
Heavy Trucks:	71.6	70.1	69.1	68.0	74.7	75.1
Vehicle Noise:	75.4	74.5	72.6	70.7	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	304	655	1,412	3,042
CNEL:	320	690	1,487	3,204

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

Scenario: EAC 2024 | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: w/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	71,545 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	5,042 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-8.24	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.69	-2.11	-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:	72.3	71.6	70.0	66.3	73.9	74.4
Medium Trucks:	70.9	70.4	66.0	65.3	72.7	73.0
Heavy Trucks:	73.4	71.9	70.9	69.8	76.5	76.8
Vehicle Noise:	77.1	76.1	74.2	72.4	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	393	847	1,825	3,931
CNEL:	414	892	1,921	4,139

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

Scenario: EAPC 2024 | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: w/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	75,942 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	5,352 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	91.03%
Medium Trucks:	75.3%	7.0%	17.7%	5.23%
Heavy Trucks:	60.4%	12.0%	27.6%	3.74%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.17	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-8.24	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.69	-2.11	-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:	72.6	71.9	70.2	66.6	74.2	74.7
Medium Trucks:	70.9	70.4	66.0	65.3	72.7	73.0
Heavy Trucks:	73.4	71.9	70.9	69.8	76.5	76.8
Vehicle Noise:	77.2	76.2	74.3	72.4	79.5	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	398	858	1,848	3,981
CNEL:	419	903	1,946	4,193

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: w/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	73,396 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	5,172 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	3.99	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-8.12	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.58	-2.11	-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:	72.5	71.7	70.1	66.4	74.0	74.5
Medium Trucks:	71.0	70.5	66.2	65.4	72.8	73.1
Heavy Trucks:	73.5	72.0	71.0	69.9	76.6	77.0
Vehicle Noise:	77.2	76.2	74.3	72.5	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	400	861	1,856	3,999
CNEL:	421	907	1,954	4,210

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: w/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	77,792 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	5,482 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	91.01%
Medium Trucks:	75.3%	7.0%	17.7%	5.24%
Heavy Trucks:	60.4%	12.0%	27.6%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	4.27	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-8.12	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.58	-2.11	-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:	72.7	72.0	70.4	66.7	74.3	74.8
Medium Trucks:	71.0	70.5	66.2	65.4	72.8	73.1
Heavy Trucks:	73.5	72.0	71.0	69.9	76.6	77.0
Vehicle Noise:	77.3	76.3	74.4	72.5	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	405	872	1,879	4,048
CNEL:	426	919	1,979	4,263

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

Scenario: E | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,477 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,641 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.07	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-11.04	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-12.50	-2.11	-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	68.8	67.2	63.5	71.1	71.6
Medium Trucks:	68.1	67.5	63.2	62.5	69.9	70.1
Heavy Trucks:	70.6	69.1	68.1	67.0	73.7	74.0
Vehicle Noise:	74.3	73.3	71.4	69.5	76.7	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	255	550	1,186	2,554
CNEL:	269	579	1,248	2,690

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

Scenario: E+P | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,541 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,786 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.97%
Medium Trucks:	75.3%	7.0%	17.7%	5.27%
Heavy Trucks:	60.4%	12.0%	27.6%	3.76%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.33	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-11.04	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-12.50	-2.11	-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:	69.8	69.1	67.4	63.8	71.4	71.8
Medium Trucks:	68.1	67.5	63.2	62.5	69.9	70.1
Heavy Trucks:	70.6	69.1	68.1	67.0	73.7	74.0
Vehicle Noise:	74.4	73.4	71.5	69.6	76.7	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	258	557	1,199	2,583
CNEL:	272	586	1,263	2,721

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

Scenario: EAC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	60,933 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,294 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.18	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-8.93	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.39	-2.11	-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:	71.6	70.9	69.3	65.6	73.2	73.7
Medium Trucks:	70.2	69.7	65.3	64.6	72.0	72.3
Heavy Trucks:	72.7	71.2	70.2	69.1	75.8	76.1
Vehicle Noise:	76.4	75.4	73.5	71.7	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	353	761	1,639	3,532
CNEL:	372	801	1,726	3,719

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

Scenario: EAPC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	62,998 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,439 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.79%
Medium Trucks:	75.3%	7.0%	17.7%	5.37%
Heavy Trucks:	60.4%	12.0%	27.6%	3.84%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-8.93	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.39	-2.11	-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:	71.8	71.1	69.4	65.8	73.4	73.8
Medium Trucks:	70.2	69.7	65.3	64.6	72.0	72.3
Heavy Trucks:	72.7	71.2	70.2	69.1	75.8	76.1
Vehicle Noise:	76.4	75.5	73.6	71.7	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	356	766	1,651	3,557
CNEL:	375	807	1,739	3,746

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	62,399 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,397 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.29	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-8.83	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.29	-2.11	-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:	71.7	71.0	69.4	65.7	73.3	73.8
Medium Trucks:	70.3	69.8	65.5	64.7	72.1	72.4
Heavy Trucks:	72.8	71.3	70.3	69.2	75.9	76.3
Vehicle Noise:	76.5	75.5	73.6	71.8	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	359	773	1,666	3,588
CNEL:	378	814	1,754	3,778

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	64,463 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,543 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.78%
Medium Trucks:	75.3%	7.0%	17.7%	5.38%
Heavy Trucks:	60.4%	12.0%	27.6%	3.84%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.44	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-8.83	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.29	-2.11	-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:	71.9	71.2	69.5	65.9	73.5	73.9
Medium Trucks:	70.3	69.8	65.5	64.7	72.1	72.4
Heavy Trucks:	72.8	71.3	70.3	69.2	75.9	76.3
Vehicle Noise:	76.5	75.6	73.7	71.8	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	361	778	1,677	3,613
CNEL:	380	820	1,766	3,805

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

Scenario: E | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,987 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,536 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-11.22	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.68	-2.11	-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:	69.4	68.7	67.0	63.3	70.9	71.4
Medium Trucks:	67.9	67.4	63.1	62.3	69.7	70.0
Heavy Trucks:	70.4	68.9	67.9	66.8	73.5	73.9
Vehicle Noise:	74.1	73.1	71.2	69.4	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	249	536	1,154	2,486
CNEL:	262	564	1,215	2,618

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

Scenario: E+P | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,795 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,663 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.93%
Medium Trucks:	75.3%	7.0%	17.7%	5.29%
Heavy Trucks:	60.4%	12.0%	27.6%	3.78%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.13	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-11.22	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.68	-2.11	-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:	69.6	68.9	67.2	63.6	71.2	71.6
Medium Trucks:	67.9	67.4	63.1	62.3	69.7	70.0
Heavy Trucks:	70.4	68.9	67.9	66.8	73.5	73.9
Vehicle Noise:	74.2	73.2	71.3	69.4	76.5	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	251	541	1,166	2,512
CNEL:	265	570	1,228	2,646

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

Scenario: EAC 2024 | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	58,592 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,129 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.01	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-9.10	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.56	-2.11	-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:	71.5	70.8	69.1	65.5	73.0	73.5
Medium Trucks:	70.0	69.5	65.2	64.4	71.8	72.1
Heavy Trucks:	72.5	71.1	70.1	68.9	75.7	76.0
Vehicle Noise:	76.2	75.3	73.3	71.5	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	344	741	1,597	3,441
CNEL:	362	781	1,682	3,623

Monday, February 28, 2022

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

Scenario: EAPC 2024 | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	60,400 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,256 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.76%
Medium Trucks:	75.3%	7.0%	17.7%	5.39%
Heavy Trucks:	60.4%	12.0%	27.6%	3.85%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.16	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-9.10	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.56	-2.11	-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:	71.6	70.9	69.2	65.6	73.2	73.6
Medium Trucks:	70.0	69.5	65.2	64.4	71.8	72.1
Heavy Trucks:	72.5	71.1	70.1	68.9	75.7	76.0
Vehicle Noise:	76.3	75.3	73.4	71.5	78.6	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	346	746	1,607	3,463
CNEL:	365	786	1,693	3,647

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

Scenario: HY 2045 | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	59,999 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,228 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-9.00	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.46	-2.11	-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:	71.6	70.9	69.2	65.6	73.2	73.6
Medium Trucks:	70.1	69.6	65.3	64.5	71.9	72.2
Heavy Trucks:	72.6	71.2	70.2	69.0	75.8	76.1
Vehicle Noise:	76.3	75.4	73.4	71.6	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	350	753	1,623	3,496
CNEL:	368	793	1,709	3,681

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

Scenario: HYP 2045 | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	61,807 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,356 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.75%
Medium Trucks:	75.3%	7.0%	17.7%	5.39%
Heavy Trucks:	60.4%	12.0%	27.6%	3.85%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.26	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-9.00	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.46	-2.11	-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:	71.7	71.0	69.3	65.7	73.3	73.7
Medium Trucks:	70.1	69.6	65.3	64.5	71.9	72.2
Heavy Trucks:	72.6	71.2	70.2	69.0	75.8	76.1
Vehicle Noise:	76.4	75.4	73.5	71.6	78.7	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	352	758	1,633	3,517
CNEL:	370	798	1,719	3,704

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

Scenario: E | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Perris Blvd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,021 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,327 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.52	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-11.59	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.05	-2.11	-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:	69.0	68.3	66.6	63.0	70.6	71.0
Medium Trucks:	67.5	67.0	62.7	62.0	69.4	69.6
Heavy Trucks:	70.0	68.6	67.6	66.4	73.2	73.5
Vehicle Noise:	73.7	72.8	70.8	69.0	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	506	1,090	2,348
CNEL:	247	533	1,147	2,472

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

Scenario: E+P | Project Name: Ramona Gateway Comme
Road Name: Ramona Expy. | Job Number: 13998
Road Segment: e/o Perris Blvd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,821 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	2,383 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.70%
Medium Trucks:	75.3%	7.0%	17.7%	5.42%
Heavy Trucks:	60.4%	12.0%	27.6%	3.88%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.64	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	82.40	-11.59	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.05	-2.11	-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:	69.1	68.4	66.7	63.1	70.7	71.1
Medium Trucks:	67.5	67.0	62.7	62.0	69.4	69.6
Heavy Trucks:	70.0	68.6	67.6	66.4	73.2	73.5
Vehicle Noise:	73.8	72.8	70.9	69.0	76.1	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	236	508	1,095	2,359
CNEL:	248	535	1,153	2,485

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

Scenario: EAC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Perris Blvd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,186 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,889 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.75	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-9.36	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.82	-2.11	-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:	71.2	70.5	68.8	65.2	72.8	73.2
Medium Trucks:	69.7	69.2	64.9	64.2	71.6	71.8
Heavy Trucks:	72.3	70.8	69.8	68.7	75.4	75.7
Vehicle Noise:	76.0	75.0	73.1	71.2	78.3	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	331	712	1,535	3,306
CNEL:	348	750	1,616	3,481

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

Scenario: EAPC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Perris Blvd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,986 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,945 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.61%
Medium Trucks:	75.3%	7.0%	17.7%	5.48%
Heavy Trucks:	60.4%	12.0%	27.6%	3.91%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.82	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-9.36	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.82	-2.11	-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:	71.3	70.6	68.9	65.3	72.9	73.3
Medium Trucks:	69.7	69.2	64.9	64.2	71.6	71.8
Heavy Trucks:	72.3	70.8	69.8	68.7	75.4	75.7
Vehicle Noise:	76.0	75.0	73.1	71.2	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	332	714	1,539	3,316
CNEL:	349	752	1,621	3,492

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Perris Blvd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	56,477 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	3,980 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.86	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-9.26	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.72	-2.11	-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:	71.3	70.6	68.9	65.3	72.9	73.3
Medium Trucks:	69.8	69.3	65.0	64.3	71.7	71.9
Heavy Trucks:	72.4	70.9	69.9	68.8	75.5	75.8
Vehicle Noise:	76.1	75.1	73.2	71.3	78.4	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	336	723	1,559	3,358
CNEL:	354	762	1,641	3,536

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Ramona Expy. | *Job Number:* 13998
Road Segment: e/o Perris Blvd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	57,277 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	4,036 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	124 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:	71.9%	12.2%	15.9%	90.61%
Medium Trucks:	75.3%	7.0%	17.7%	5.48%
Heavy Trucks:	60.4%	12.0%	27.6%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.154
Medium Trucks:	68.024
Heavy Trucks:	68.037

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.92	-2.12	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	82.40	-9.26	-2.11	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.72	-2.11	-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:	71.4	70.7	69.0	65.4	73.0	73.4
Medium Trucks:	69.8	69.3	65.0	64.3	71.7	71.9
Heavy Trucks:	72.4	70.9	69.9	68.8	75.5	75.8
Vehicle Noise:	76.1	75.1	73.2	71.3	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	337	725	1,563	3,367
CNEL:	355	764	1,646	3,546

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

Scenario: E
Road Name: Morgan St.
Road Segment: e/o Nevada Rd.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,958 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-10.87	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-22.99	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-24.45	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:	58.1	57.4	55.7	52.0	59.6	60.1
Medium Trucks:	57.0	56.5	52.2	51.4	58.8	59.1
Heavy Trucks:	60.3	58.8	57.8	56.7	63.5	63.8
Vehicle Noise:	63.4	62.4	60.6	58.8	65.9	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	116	251
CNEL:	26	57	122	264

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

Scenario: E+P
Road Name: Morgan St.
Road Segment: e/o Nevada Rd.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,358 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	166 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:	71.9%	12.2%	15.9%	92.09%
Medium Trucks:	75.3%	7.0%	17.7%	4.61%
Heavy Trucks:	60.4%	12.0%	27.6%	3.30%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.99	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-22.99	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-24.45	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:	58.9	58.2	56.6	52.9	60.5	61.0
Medium Trucks:	57.0	56.5	52.2	51.4	58.8	59.1
Heavy Trucks:	60.3	58.8	57.8	56.7	63.5	63.8
Vehicle Noise:	63.7	62.7	60.9	59.0	66.1	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	56	120	259
CNEL:	27	59	127	273

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

Scenario: EAC 2024
Road Name: Morgan St.
Road Segment: e/o Nevada Rd.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,078 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	146 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-10.62	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-22.73	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-24.19	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:	58.3	57.6	55.9	52.3	59.9	60.3
Medium Trucks:	57.2	56.7	52.4	51.7	59.1	59.3
Heavy Trucks:	60.6	59.1	58.1	57.0	63.7	64.0
Vehicle Noise:	63.7	62.7	60.8	59.1	66.2	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	56	121	261
CNEL:	27	59	127	274

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

Scenario: EAPC 2024
Road Name: Morgan St.
Road Segment: e/o Nevada Rd.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,477 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	175 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:	71.9%	12.2%	15.9%	92.01%
Medium Trucks:	75.3%	7.0%	17.7%	4.66%
Heavy Trucks:	60.4%	12.0%	27.6%	3.33%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.78	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-22.73	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-24.19	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:	59.2	58.4	56.8	53.1	60.7	61.2
Medium Trucks:	57.2	56.7	52.4	51.7	59.1	59.3
Heavy Trucks:	60.6	59.1	58.1	57.0	63.7	64.0
Vehicle Noise:	64.0	63.0	61.1	59.3	66.4	66.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	27	58	125	269
CNEL:	28	61	132	284

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

Scenario: HY 2045 | Project Name: Ramona Gateway Comme
Road Name: Morgan St. | Job Number: 13998
Road Segment: e/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,029 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	213 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-8.98	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-21.10	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-22.56	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:	60.0	59.2	57.6	53.9	61.5	62.0
Medium Trucks:	58.9	58.4	54.0	53.3	60.7	61.0
Heavy Trucks:	62.2	60.7	59.7	58.6	65.3	65.7
Vehicle Noise:	65.3	64.3	62.5	60.7	67.8	68.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	35	76	164	353

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

Scenario: HYP 2045 | Project Name: Ramona Gateway Comme
Road Name: Morgan St. | Job Number: 13998
Road Segment: e/o Nevada Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,429 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	242 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:	71.9%	12.2%	15.9%	91.58%
Medium Trucks:	75.3%	7.0%	17.7%	4.91%
Heavy Trucks:	60.4%	12.0%	27.6%	3.51%

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:	68.46	-8.39	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-21.10	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-22.56	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:	60.5	59.8	58.2	54.5	62.1	62.6
Medium Trucks:	58.9	58.4	54.0	53.3	60.7	61.0
Heavy Trucks:	62.2	60.7	59.7	58.6	65.3	65.7
Vehicle Noise:	65.5	64.5	62.7	60.9	67.9	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	343
CNEL:	36	78	168	361

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

Scenario: E | Project Name: Ramona Gateway Comme
Road Name: Morgan St. | Job Number: 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,314 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	304 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-7.44	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-19.56	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-21.02	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:	61.5	60.8	59.1	55.5	63.1	63.5
Medium Trucks:	60.4	59.9	55.6	54.8	62.3	62.5
Heavy Trucks:	63.7	62.3	61.3	60.1	66.9	67.2
Vehicle Noise:	66.9	65.9	64.0	62.3	69.3	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	197	424
CNEL:	45	96	207	447

Monday, February 28, 2022

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

Scenario: E+P | Project Name: Ramona Gateway Comme
Road Name: Morgan St. | Job Number: 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,113 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	360 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:	71.9%	12.2%	15.9%	91.96%
Medium Trucks:	75.3%	7.0%	17.7%	4.69%
Heavy Trucks:	60.4%	12.0%	27.6%	3.35%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-6.63	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-19.56	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-21.02	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:	62.3	61.6	59.9	56.3	63.9	64.3
Medium Trucks:	60.4	59.9	55.6	54.8	62.3	62.5
Heavy Trucks:	63.7	62.3	61.3	60.1	66.9	67.2
Vehicle Noise:	67.1	66.1	64.3	62.5	69.5	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	203	438
CNEL:	46	99	214	461

Monday, February 28, 2022

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

Scenario: EAC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Morgan St. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,861 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	343 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-6.93	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-19.04	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-20.50	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:	62.0	61.3	59.6	56.0	63.6	64.0
Medium Trucks:	60.9	60.4	56.1	55.4	62.8	63.0
Heavy Trucks:	64.3	62.8	61.8	60.6	67.4	67.7
Vehicle Noise:	67.4	66.4	64.5	62.8	69.9	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	46	99	213	460
CNEL:	48	104	224	483

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

Scenario: EAPC 2024 | *Project Name:* Ramona Gateway Comme
Road Name: Morgan St. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,660 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	399 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:	71.9%	12.2%	15.9%	91.82%
Medium Trucks:	75.3%	7.0%	17.7%	4.77%
Heavy Trucks:	60.4%	12.0%	27.6%	3.41%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-6.20	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-19.04	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-20.50	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:	62.7	62.0	60.4	56.7	64.3	64.8
Medium Trucks:	60.9	60.4	56.1	55.4	62.8	63.0
Heavy Trucks:	64.3	62.8	61.8	60.6	67.4	67.7
Vehicle Noise:	67.6	66.6	64.8	63.0	70.0	70.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	102	219	473
CNEL:	50	107	231	498

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Morgan St. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,957 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	490 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-5.37	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-17.49	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-18.94	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:	63.6	62.9	61.2	57.6	65.1	65.6
Medium Trucks:	62.5	62.0	57.7	56.9	64.3	64.6
Heavy Trucks:	65.8	64.4	63.3	62.2	69.0	69.3
Vehicle Noise:	69.0	67.9	66.1	64.4	71.4	71.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	58	126	271	584
CNEL:	61	132	285	614

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Morgan St. | *Job Number:* 13998
Road Segment: e/o Webster Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,757 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	547 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:	71.9%	12.2%	15.9%	91.46%
Medium Trucks:	75.3%	7.0%	17.7%	4.98%
Heavy Trucks:	60.4%	12.0%	27.6%	3.56%

Noise Source 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	-4.85	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-17.49	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-18.94	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:	64.1	63.4	61.7	58.1	65.7	66.1
Medium Trucks:	62.5	62.0	57.7	56.9	64.3	64.6
Heavy Trucks:	65.8	64.4	63.3	62.2	69.0	69.3
Vehicle Noise:	69.1	68.1	66.3	64.5	71.5	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	60	128	276	595
CNEL:	63	135	291	627

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

Scenario: E
Road Name: Morgan St.
Road Segment: e/o Indian Av.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,200 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	155 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-10.37	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-22.49	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-23.95	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:	58.6	57.9	56.2	52.6	60.1	60.6
Medium Trucks:	57.5	57.0	52.7	51.9	59.3	59.6
Heavy Trucks:	60.8	59.4	58.3	57.2	64.0	64.3
Vehicle Noise:	64.0	62.9	61.1	59.4	66.4	66.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	28	61	132	285

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

Scenario: E+P
Road Name: Morgan St.
Road Segment: e/o Indian Av.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,599 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	183 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:	71.9%	12.2%	15.9%	91.94%
Medium Trucks:	75.3%	7.0%	17.7%	4.70%
Heavy Trucks:	60.4%	12.0%	27.6%	3.36%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.57	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-22.49	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-23.95	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:	59.4	58.7	57.0	53.3	60.9	61.4
Medium Trucks:	57.5	57.0	52.7	51.9	59.3	59.6
Heavy Trucks:	60.8	59.4	58.3	57.2	64.0	64.3
Vehicle Noise:	64.2	63.2	61.4	59.5	66.6	66.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	279
CNEL:	29	63	137	294

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

Scenario: EAC 2024
Road Name: Morgan St.
Road Segment: e/o Indian Av.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,556 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	180 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-9.72	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-21.83	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-23.29	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:	59.2	58.5	56.8	53.2	60.8	61.2
Medium Trucks:	58.1	57.6	53.3	52.6	60.0	60.2
Heavy Trucks:	61.5	60.0	59.0	57.9	64.6	64.9
Vehicle Noise:	64.6	63.6	61.7	60.0	67.1	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	299
CNEL:	32	68	146	315

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

Scenario: EAPC 2024
Road Name: Morgan St.
Road Segment: e/o Indian Av.
Project Name: Ramona Gateway Comme
Job Number: 13998

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,956 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	208 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:	71.9%	12.2%	15.9%	91.76%
Medium Trucks:	75.3%	7.0%	17.7%	4.80%
Heavy Trucks:	60.4%	12.0%	27.6%	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:	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	-9.02	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	79.45	-21.83	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-23.29	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	59.2	57.5	53.9	61.5	61.9
Medium Trucks:	58.1	57.6	53.3	52.6	60.0	60.2
Heavy Trucks:	61.5	60.0	59.0	57.9	64.6	64.9
Vehicle Noise:	64.8	63.8	62.0	60.2	67.2	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	307
CNEL:	32	70	150	324

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

Scenario: HY 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Morgan St. | *Job Number:* 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,625 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	255 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:	71.9%	12.2%	15.9%	90.47%
Medium Trucks:	75.3%	7.0%	17.7%	5.56%
Heavy Trucks:	60.4%	12.0%	27.6%	3.97%

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	-8.20	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-20.32	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-21.78	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:	60.7	60.0	58.4	54.7	62.3	62.8
Medium Trucks:	59.6	59.1	54.8	54.1	61.5	61.7
Heavy Trucks:	63.0	61.5	60.5	59.4	66.1	66.4
Vehicle Noise:	66.1	65.1	63.3	61.5	68.6	68.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	38	81	175	378
CNEL:	40	86	185	398

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

Scenario: HYP 2045 | *Project Name:* Ramona Gateway Comme
Road Name: Morgan St. | *Job Number:* 13998
Road Segment: e/o Indian Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,025 vehicles
Peak Hour Percentage:	7.05%
Peak Hour Volume:	284 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:	71.9%	12.2%	15.9%	91.42%
Medium Trucks:	75.3%	7.0%	17.7%	5.00%
Heavy Trucks:	60.4%	12.0%	27.6%	3.58%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-7.70	1.67	-1.20	*-4.63*	0.000	0.000
Medium Trucks:	79.45	-20.32	1.71	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-21.78	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:	61.2	60.5	58.9	55.2	62.8	63.3
Medium Trucks:	59.6	59.1	54.8	54.1	61.5	61.7
Heavy Trucks:	63.0	61.5	60.5	59.4	66.1	66.4
Vehicle Noise:	66.3	65.3	63.4	61.6	68.7	69.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	83	179	385
CNEL:	41	87	188	405

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APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS (LMAX)

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13998 - Ramona Gateway Commerce Center

CadnaA Noise Prediction Model: 13998_06.cna
Date: 22.03.22
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 (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	58.4	56.1	62.7	80.0	60.0	0.0				5.00	a	6259920.31	2252784.09	5.00
RECEIVERS		R2	54.9	53.7	60.2	80.0	60.0	0.0				5.00	a	6260576.74	2251019.92	5.00
RECEIVERS		R3	62.6	61.6	68.0	80.0	60.0	0.0				5.00	a	6259825.35	2250569.24	5.00
RECEIVERS		R4	59.1	58.2	64.6	80.0	60.0	0.0				5.00	a	6259207.76	2250557.95	5.00
RECEIVERS		R5	52.8	51.8	58.2	80.0	60.0	0.0				5.00	a	6257425.14	2249822.33	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6259627.01	2252236.51	30.00
POINTSOURCE		AC02	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6259467.78	2252225.59	30.00
POINTSOURCE		AC03	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6259326.17	2252216.98	30.00
POINTSOURCE		AC04	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6259106.24	2252219.24	30.00
POINTSOURCE		AC05	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6258961.93	2252188.53	30.00
POINTSOURCE		AC06	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6258823.64	2252243.16	30.00
POINTSOURCE		AC07	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6258659.28	2252163.23	30.00
POINTSOURCE		AC08	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6259564.94	2250786.94	50.00
POINTSOURCE		DT01	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6259388.83	2252189.81	3.00
POINTSOURCE		DT02	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6259507.52	2252179.04	3.00
POINTSOURCE		DT03	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6259139.56	2252240.10	3.00
POINTSOURCE		DT04	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6259001.55	2252242.10	3.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		DT05	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6258662.62	2252224.92	3.00
POINTSOURCE		DT06	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6259151.53	2252251.90	3.00
POINTSOURCE		DT07	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6259013.17	2252254.65	3.00
POINTSOURCE		DT08	86.5	86.5	86.5	Lw	86.5		900.00	0.00	270.00	3.00	a	6258663.70	2252240.32	3.00
POINTSOURCE1		GAS01	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259583.04	2252131.04	5.00
POINTSOURCE1		GAS02	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259616.12	2252131.04	5.00
POINTSOURCE1		GAS03	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259648.36	2252130.76	5.00
POINTSOURCE1		GAS04	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259681.44	2252129.92	5.00
POINTSOURCE1		GAS05	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259681.44	2252147.30	5.00
POINTSOURCE1		GAS06	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259648.92	2252147.30	5.00
POINTSOURCE1		GAS07	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259616.40	2252147.86	5.00
POINTSOURCE1		GAS08	86.1	86.1	86.1	Lw	86.1		900.00	0.00	540.00	5.00	a	6259583.04	2252148.70	5.00
POINTSOURCE		PARK01	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259737.55	2250719.13	5.00
POINTSOURCE		PARK02	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259732.93	2250827.01	5.00
POINTSOURCE		PARK03	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258718.84	2250739.16	5.00
POINTSOURCE		PARK04	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258721.92	2250840.88	5.00
POINTSOURCE		PARK05	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259656.29	2252195.76	5.00
POINTSOURCE		PARK06	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259599.17	2252197.14	5.00
POINTSOURCE		PARK07	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259488.36	2252155.84	5.00
POINTSOURCE		PARK08	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259452.57	2252156.53	5.00
POINTSOURCE		PARK09	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259357.59	2252156.53	5.00
POINTSOURCE		PARK10	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259310.78	2252157.91	5.00
POINTSOURCE		PARK11	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259104.31	2252098.03	5.00
POINTSOURCE		PARK12	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258970.78	2252099.40	5.00
POINTSOURCE		PARK13	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258807.66	2252117.30	5.00
POINTSOURCE		PARK14	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258842.08	2252136.57	5.00
POINTSOURCE		PARK15	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258851.02	2252181.31	5.00
POINTSOURCE		PARK16	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258794.59	2252182.68	5.00
POINTSOURCE		PARK17	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258757.42	2252127.62	5.00
POINTSOURCE		PARK18	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259371.07	2252108.26	5.00
POINTSOURCE		PARK19	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259508.16	2252107.24	5.00
POINTSOURCE		PARK20	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258859.97	2250618.95	5.00
POINTSOURCE		PARK21	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258959.08	2250612.75	5.00
POINTSOURCE		PARK22	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259056.82	2250614.82	5.00
POINTSOURCE		PARK23	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259157.99	2250612.07	5.00
POINTSOURCE		PARK24	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259261.92	2250612.75	5.00
POINTSOURCE		PARK25	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259367.22	2250610.00	5.00
POINTSOURCE		PARK26	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259471.15	2250607.25	5.00
POINTSOURCE		PARK27	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259573.70	2250610.00	5.00
POINTSOURCE		PARK28	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259567.51	2250679.52	5.00
POINTSOURCE		PARK29	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259469.77	2250680.89	5.00
POINTSOURCE		PARK30	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259365.85	2250680.89	5.00
POINTSOURCE		PARK31	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259262.61	2250683.65	5.00
POINTSOURCE		PARK32	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259160.05	2250683.65	5.00
POINTSOURCE		PARK33	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6259058.19	2250682.96	5.00
POINTSOURCE		PARK34	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258960.46	2250686.40	5.00
POINTSOURCE		PARK35	91.4	91.4	91.4	Lw	91.4		900.00	0.00	540.00	5.00	a	6258871.67	2250689.84	5.00
POINTSOURCE		PLAY01	97.9	97.9	97.9	Lw	97.9		900.00	0.00	270.00	5.00	a	6258965.58	2252126.17	5.00
POINTSOURCE		PLAY02	97.9	97.9	97.9	Lw	97.9		900.00	0.00	270.00	5.00	a	6259099.89	2252124.95	5.00
POINTSOURCE		PLAY03	97.9	97.9	97.9	Lw	97.9		900.00	0.00	270.00	5.00	a	6259302.17	2252180.30	5.00
POINTSOURCE		PLAY04	97.9	97.9	97.9	Lw	97.9		900.00	0.00	270.00	5.00	a	6259466.60	2252190.88	5.00
POINTSOURCE		TRASH01	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6258712.49	2250905.04	5.00
POINTSOURCE		TRASH02	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6258720.81	2251809.03	5.00
POINTSOURCE		TRASH03	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6259720.53	2250892.55	5.00
POINTSOURCE		TRASH04	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6259724.69	2251799.87	5.00
POINTSOURCE		TRASH05	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6259263.86	2252100.53	5.00
POINTSOURCE		TRASH06	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6259319.94	2252101.40	5.00
POINTSOURCE		TRASH07	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6259440.94	2252101.92	5.00
POINTSOURCE		TRASH08	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6259747.71	2252116.85	5.00
POINTSOURCE		TRASH09	102.8	102.8	102.8	Lw	102.8		150.00	0.00	90.00	5.00	a	6258880.62	2252117.30	5.00
POINTSOURCE		TUNNEL01	111.0	111.0	111.0	Lw	111		900.00	0.00	270.00	8.00	a	6259800.68	2252236.63	8.00
POINTSOURCE		TUNNEL02	111.0	111.0	111.0	Lw	111		900.00	0.00	270.00	8.00	a	6259798.86	2252112.39	8.00
POINTSOURCE2		VAC01	89.7	89.7	89.7	Lw	89.7		900.00	0.00	270.00	3.00	a	6259756.33	2252206.34	3.00
POINTSOURCE2		VAC02	89.7	89.7	89.7	Lw	89.7		900.00	0.00	270.00	3.00	a	6259705.31	2252216.48	3.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE		TRUCK03	102.2	87.1	86.6	76.5	61.4	60.9	PWL-Pt	91.4					327.0	10.0	9.0	6.2	8	a
LINESOURCE		TRUCK03	93.0	77.9	77.4	76.5	61.4	60.9	PWL-Pt	91.4					327.0	10.0	9.0	6.2	8	a
LINESOURCE		TRUCK02	91.6	76.5	76.0	76.5	61.4	60.9	PWL-Pt	91.4					327.0	10.0	9.0	6.2	8	a

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	a			6259677.45	2251820.54	8.00	0.00
					6259675.90	2251941.27	8.00	0.00
					6259658.95	2251955.14	8.00	0.00
					6259646.62	2251961.31	8.00	0.00
					6259623.50	2251967.47	8.00	0.00
					6258765.07	2251976.72	8.00	0.00
					6258745.04	2251956.68	8.00	0.00
					6258708.05	2251948.98	8.00	0.00
					6258595.48	2251942.81	8.00	0.00
LINESOURCE	8.00	a			6258780.44	2251830.07	8.00	0.00
					6258782.09	2251976.54	8.00	0.00
LINESOURCE	8.00	a			6258701.19	2251133.70	8.00	0.00
					6258595.81	2251133.76	8.00	0.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE		DOCK01	119.7	119.7	119.7	76.6	76.6	76.6	Lw	119.7		900.00	0.00	540.00	8	a
AREASOURCE		DOCK02	119.7	119.7	119.7	76.6	76.6	76.6	Lw	119.7		900.00	0.00	540.00	8	a

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a			6258654.54	2251831.93	8.00	0.00
					6258890.46	2251828.45	8.00	0.00
					6258880.04	2250885.74	8.00	0.00
					6258643.42	2250886.82	8.00	0.00
					6258646.85	2251088.67	8.00	0.00
					6258700.73	2251086.10	8.00	0.00
					6258701.59	2251175.05	8.00	0.00
					6258646.85	2251173.34	8.00	0.00
AREASOURCE	8.00	a			6259574.43	2251821.78	8.00	0.00
					6259633.89	2251820.48	8.00	0.00
					6259701.54	2251820.58	8.00	0.00
					6259807.77	2251820.58	8.00	0.00
					6259798.37	2250874.82	8.00	0.00
					6259624.83	2250876.63	8.00	0.00
					6259566.24	2250876.63	8.00	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)
BARRIEREXISTING		0						6.00	a			6260560.53	2251104.42	6.00	0.00
												6260561.31	2251009.02	6.00	0.00
												6260585.62	2251008.32	6.00	0.00
BARRIERTEMP		0						14.00	a			6258759.98	2251830.37	14.00	0.00
												6258654.54	2251831.93	14.00	0.00
												6258646.85	2251173.34	14.00	0.00
												6258701.59	2251175.05	14.00	0.00
												6258701.39	2251154.32	14.00	0.00
BARRIERTEMP		0						14.00	a			6258700.99	2251113.18	14.00	0.00
												6258700.73	2251086.10	14.00	0.00
												6258646.85	2251088.67	14.00	0.00
												6258643.42	2250886.82	14.00	0.00
												6258766.83	2250886.26	14.00	0.00
BARRIERTEMP		0						14.00	a			6259701.54	2251820.58	14.00	0.00
												6259807.77	2251820.58	14.00	0.00
												6259798.37	2250874.82	14.00	0.00
												6259695.44	2250875.89	14.00	0.00
BARRIERTEMP		0						14.00	a			6259649.70	2250876.37	14.00	0.00
												6259624.83	2250876.63	14.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00001	x	0		45.00	a	6258847.34	2251924.35	45.00	0.00
								6258875.98	2251923.31	45.00	0.00
								6258876.51	2251930.60	45.00	0.00
								6259590.49	2251923.78	45.00	0.00
								6259590.49	2251916.83	45.00	0.00
								6259619.14	2251916.83	45.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6259619.14	2251887.75	45.00	0.00
								6259628.69	2251886.88	45.00	0.00
								6259628.25	2251873.86	45.00	0.00
								6259635.20	2251873.43	45.00	0.00
								6259633.89	2251820.48	45.00	0.00
								6259574.43	2251821.78	45.00	0.00
								6259566.24	2250876.63	45.00	0.00
								6259624.83	2250876.63	45.00	0.00
								6259623.53	2250767.26	45.00	0.00
								6259615.72	2250767.26	45.00	0.00
								6259618.32	2250754.23	45.00	0.00
								6259607.91	2250752.93	45.00	0.00
								6259606.61	2250725.59	45.00	0.00
								6259577.96	2250725.59	45.00	0.00
								6259579.26	2250717.78	45.00	0.00
								6258834.47	2250730.80	45.00	0.00
								6258835.77	2250763.35	45.00	0.00
								6258826.66	2250765.95	45.00	0.00
								6258827.96	2250775.07	45.00	0.00
								6258817.54	2250776.37	45.00	0.00
								6258822.75	2250885.74	45.00	0.00
								6258880.04	2250885.74	45.00	0.00
								6258890.46	2251828.45	45.00	0.00
								6258827.96	2251831.06	45.00	0.00
								6258829.26	2251880.54	45.00	0.00
								6258837.07	2251879.23	45.00	0.00
								6258838.38	2251896.16	45.00	0.00
								6258844.89	2251896.16	45.00	0.00
BUILDING		BUILDING00002	x	0		25.00	a	6258637.54	2252210.84	25.00	0.00
								6258681.87	2252210.33	25.00	0.00
								6258681.36	2252111.30	25.00	0.00
								6258636.28	2252111.30	25.00	0.00
BUILDING		BUILDING00003	x	0		25.00	a	6258765.70	2252269.85	25.00	0.00
								6258886.26	2252269.60	25.00	0.00
								6258885.51	2252209.57	25.00	0.00
								6258765.45	2252211.34	25.00	0.00
BUILDING		BUILDING00004	x	0		25.00	a	6258939.96	2252234.14	25.00	0.00
								6258985.04	2252233.63	25.00	0.00
								6258983.52	2252135.10	25.00	0.00
								6258938.44	2252135.61	25.00	0.00
BUILDING		BUILDING00005	x	0		25.00	a	6259076.48	2252232.62	25.00	0.00
								6259121.56	2252232.36	25.00	0.00
								6259120.80	2252132.83	25.00	0.00
								6259075.46	2252133.59	25.00	0.00
BUILDING		BUILDING00006	x	0		25.00	a	6259276.57	2252247.31	25.00	0.00
								6259376.36	2252246.04	25.00	0.00
								6259376.11	2252187.28	25.00	0.00
								6259276.57	2252188.29	25.00	0.00
BUILDING		BUILDING00007	x	0		25.00	a	6259438.92	2252243.26	25.00	0.00
								6259498.70	2252242.24	25.00	0.00
								6259497.94	2252202.98	25.00	0.00
								6259438.16	2252203.24	25.00	0.00
BUILDING		BUILDING00008	x	0		25.00	a	6259572.15	2252258.71	25.00	0.00
								6259605.07	2252257.69	25.00	0.00
								6259604.82	2252260.48	25.00	0.00
								6259648.64	2252259.97	25.00	0.00
								6259648.38	2252257.69	25.00	0.00
								6259685.11	2252256.68	25.00	0.00
								6259684.86	2252214.63	25.00	0.00
								6259571.64	2252216.41	25.00	0.00
BUILDING		BUILDING00009	x	0		25.00	a	6259789.21	2252230.08	25.00	0.00
								6259810.74	2252230.08	25.00	0.00
								6259810.23	2252119.65	25.00	0.00
								6259778.57	2252120.16	25.00	0.00
								6259779.33	2252225.27	25.00	0.00
								6259789.46	2252225.27	25.00	0.00

APPENDIX 9.2:

CADNAA OPERATIONAL NOISE MODEL INPUTS (LEQ)

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13998 - Ramona Gateway Commerce Center

CadnaA Noise Prediction Model: 13998_06_CNEL.cna
Date: 22.03.22
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 (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	52.2	49.4	56.1	80.0	60.0	0.0				5.00	a	6259920.31	2252784.09	5.00
RECEIVERS		R2	47.0	45.8	52.2	80.0	60.0	0.0				5.00	a	6260576.74	2251019.92	5.00
RECEIVERS		R3	54.9	53.9	60.3	80.0	60.0	0.0				5.00	a	6259825.35	2250569.24	5.00
RECEIVERS		R4	55.5	54.5	60.9	80.0	60.0	0.0				5.00	a	6259207.76	2250557.95	5.00
RECEIVERS		R5	44.8	43.8	50.2	80.0	60.0	0.0				5.00	a	6257425.14	2249822.33	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6259627.01	2252236.51	30.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6259467.78	2252225.59	30.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6259326.17	2252216.98	30.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6259106.24	2252219.24	30.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6258961.93	2252188.53	30.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6258823.64	2252243.16	30.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6258659.28	2252163.23	30.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6259564.94	2250786.94	50.00
POINTSOURCE		DT01	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6259388.83	2252189.81	3.00
POINTSOURCE		DT02	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6259507.52	2252179.04	3.00
POINTSOURCE		DT03	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6259139.56	2252240.10	3.00
POINTSOURCE		DT04	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6259001.55	2252242.10	3.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		DT05	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6258662.62	2252224.92	3.00
POINTSOURCE		DT06	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6259151.53	2252251.90	3.00
POINTSOURCE		DT07	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6259013.17	2252254.65	3.00
POINTSOURCE		DT08	83.2	83.2	83.2	Lw	83.2		900.00	0.00	270.00	3.00	a	6258663.70	2252240.32	3.00
POINTSOURCE1		GAS01	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259583.04	2252131.04	5.00
POINTSOURCE1		GAS02	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259616.12	2252131.04	5.00
POINTSOURCE1		GAS03	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259648.36	2252130.76	5.00
POINTSOURCE1		GAS04	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259681.44	2252129.92	5.00
POINTSOURCE1		GAS05	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259681.44	2252147.30	5.00
POINTSOURCE1		GAS06	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259648.92	2252147.30	5.00
POINTSOURCE1		GAS07	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259616.40	2252147.86	5.00
POINTSOURCE1		GAS08	79.9	79.9	79.9	Lw	79.9		900.00	0.00	540.00	5.00	a	6259583.04	2252148.70	5.00
POINTSOURCE		PARK01	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259737.55	2250719.13	5.00
POINTSOURCE		PARK02	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259732.93	2250827.01	5.00
POINTSOURCE		PARK03	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258718.84	2250739.16	5.00
POINTSOURCE		PARK04	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258721.92	2250840.88	5.00
POINTSOURCE		PARK05	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259656.29	2252195.76	5.00
POINTSOURCE		PARK06	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259599.17	2252197.14	5.00
POINTSOURCE		PARK07	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259488.36	2252155.84	5.00
POINTSOURCE		PARK08	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259452.57	2252156.53	5.00
POINTSOURCE		PARK09	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259357.59	2252156.53	5.00
POINTSOURCE		PARK10	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259310.78	2252157.91	5.00
POINTSOURCE		PARK11	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259104.31	2252098.03	5.00
POINTSOURCE		PARK12	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258970.78	2252099.40	5.00
POINTSOURCE		PARK13	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258807.66	2252117.30	5.00
POINTSOURCE		PARK14	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258842.08	2252136.57	5.00
POINTSOURCE		PARK15	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258851.02	2252181.31	5.00
POINTSOURCE		PARK16	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258794.59	2252182.68	5.00
POINTSOURCE		PARK17	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258757.42	2252127.62	5.00
POINTSOURCE		PARK18	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259371.07	2252108.26	5.00
POINTSOURCE		PARK19	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259508.16	2252107.24	5.00
POINTSOURCE		PARK20	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258859.97	2250618.95	5.00
POINTSOURCE		PARK21	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258959.08	2250612.75	5.00
POINTSOURCE		PARK22	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259056.82	2250614.82	5.00
POINTSOURCE		PARK23	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259157.99	2250612.07	5.00
POINTSOURCE		PARK24	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259261.92	2250612.75	5.00
POINTSOURCE		PARK25	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259367.22	2250610.00	5.00
POINTSOURCE		PARK26	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259471.15	2250607.25	5.00
POINTSOURCE		PARK27	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259573.70	2250610.00	5.00
POINTSOURCE		PARK28	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259567.51	2250679.52	5.00
POINTSOURCE		PARK29	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259469.77	2250680.89	5.00
POINTSOURCE		PARK30	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259365.85	2250680.89	5.00
POINTSOURCE		PARK31	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259262.61	2250683.65	5.00
POINTSOURCE		PARK32	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259160.05	2250683.65	5.00
POINTSOURCE		PARK33	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6259058.19	2250682.96	5.00
POINTSOURCE		PARK34	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258960.46	2250686.40	5.00
POINTSOURCE		PARK35	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	5.00	a	6258871.67	2250689.84	5.00
POINTSOURCE		PLAY01	91.5	91.5	91.5	Lw	91.5		900.00	0.00	270.00	5.00	a	6258965.58	2252126.17	5.00
POINTSOURCE		PLAY02	91.5	91.5	91.5	Lw	91.5		900.00	0.00	270.00	5.00	a	6259099.89	2252124.95	5.00
POINTSOURCE		PLAY03	91.5	91.5	91.5	Lw	91.5		900.00	0.00	270.00	5.00	a	6259302.17	2252180.30	5.00
POINTSOURCE		PLAY04	91.5	91.5	91.5	Lw	91.5		900.00	0.00	270.00	5.00	a	6259466.60	2252190.88	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6258712.49	2250905.04	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6258720.81	2251809.03	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6259720.53	2250892.55	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6259724.69	2251799.87	5.00
POINTSOURCE		TRASH05	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6259263.86	2252100.53	5.00
POINTSOURCE		TRASH06	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6259319.94	2252101.40	5.00
POINTSOURCE		TRASH07	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6259440.94	2252101.92	5.00
POINTSOURCE		TRASH08	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6259747.71	2252116.85	5.00
POINTSOURCE		TRASH09	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	5.00	a	6258880.62	2252117.30	5.00
POINTSOURCE		TUNNEL01	106.0	106.0	106.0	Lw	106		900.00	0.00	270.00	8.00	a	6259800.68	2252236.63	8.00
POINTSOURCE		TUNNEL02	106.0	106.0	106.0	Lw	106		900.00	0.00	270.00	8.00	a	6259798.86	2252112.39	8.00
POINTSOURCE2		VAC01	86.3	86.3	86.3	Lw	86.3		900.00	0.00	270.00	3.00	a	6259756.33	2252206.34	3.00
POINTSOURCE2		VAC02	86.3	86.3	86.3	Lw	86.3		900.00	0.00	270.00	3.00	a	6259705.31	2252216.48	3.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE		TRUCK03	100.5	85.4	84.9	74.8	59.7	59.2	PWL-Pt	89.7					327.0	10.0	9.0	6.2	8	a
LINESOURCE		TRUCK03	91.3	76.2	75.7	74.8	59.7	59.2	PWL-Pt	89.7					327.0	10.0	9.0	6.2	8	a
LINESOURCE		TRUCK02	89.9	74.8	74.3	74.8	59.7	59.2	PWL-Pt	89.7					327.0	10.0	9.0	6.2	8	a

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	a			6259677.45	2251820.54	8.00	0.00
					6259675.90	2251941.27	8.00	0.00
					6259658.95	2251955.14	8.00	0.00
					6259646.62	2251961.31	8.00	0.00
					6259623.50	2251967.47	8.00	0.00
					6258765.07	2251976.72	8.00	0.00
					6258745.04	2251956.68	8.00	0.00
					6258708.05	2251948.98	8.00	0.00
					6258595.48	2251942.81	8.00	0.00
LINESOURCE	8.00	a			6258780.44	2251830.07	8.00	0.00
					6258782.09	2251976.54	8.00	0.00
LINESOURCE	8.00	a			6258701.19	2251133.70	8.00	0.00
					6258595.81	2251133.76	8.00	0.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE		DOCK01	111.5	111.5	111.5	68.4	68.4	68.4	Lw	111.5		900.00	0.00	540.00	8	a
AREASOURCE		DOCK02	111.5	111.5	111.5	68.4	68.4	68.4	Lw	111.5		900.00	0.00	540.00	8	a

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a			6258654.54	2251831.93	8.00	0.00
					6258890.46	2251828.45	8.00	0.00
					6258880.04	2250885.74	8.00	0.00
					6258643.42	2250886.82	8.00	0.00
					6258646.85	2251088.67	8.00	0.00
					6258700.73	2251086.10	8.00	0.00
					6258701.59	2251175.05	8.00	0.00
					6258646.85	2251173.34	8.00	0.00
AREASOURCE	8.00	a			6259574.43	2251821.78	8.00	0.00
					6259633.89	2251820.48	8.00	0.00
					6259701.54	2251820.58	8.00	0.00
					6259807.77	2251820.58	8.00	0.00
					6259798.37	2250874.82	8.00	0.00
					6259624.83	2250876.63	8.00	0.00
					6259566.24	2250876.63	8.00	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)
BARRIEREXISTING		0						6.00	a			6260560.53	2251104.42	6.00	0.00
												6260561.31	2251009.02	6.00	0.00
												6260585.62	2251008.32	6.00	0.00
BARRIERTEMP		0						14.00	a			6258759.98	2251830.37	14.00	0.00
												6258654.54	2251831.93	14.00	0.00
												6258646.85	2251173.34	14.00	0.00
												6258701.59	2251175.05	14.00	0.00
												6258701.39	2251154.32	14.00	0.00
BARRIERTEMP		0						14.00	a			6258700.99	2251113.18	14.00	0.00
												6258700.73	2251086.10	14.00	0.00
												6258646.85	2251088.67	14.00	0.00
												6258643.42	2250886.82	14.00	0.00
												6258766.83	2250886.26	14.00	0.00
BARRIERTEMP		0						14.00	a			6259701.54	2251820.58	14.00	0.00
												6259807.77	2251820.58	14.00	0.00
												6259798.37	2250874.82	14.00	0.00
												6259695.44	2250875.89	14.00	0.00
BARRIERTEMP		0						14.00	a			6259649.70	2250876.37	14.00	0.00
												6259624.83	2250876.63	14.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00001	x	0		45.00	a	6258847.34	2251924.35	45.00	0.00
								6258875.98	2251923.31	45.00	0.00
								6258876.51	2251930.60	45.00	0.00
								6259590.49	2251923.78	45.00	0.00
								6259590.49	2251916.83	45.00	0.00
								6259619.14	2251916.83	45.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6259619.14	2251887.75	45.00	0.00
								6259628.69	2251886.88	45.00	0.00
								6259628.25	2251873.86	45.00	0.00
								6259635.20	2251873.43	45.00	0.00
								6259633.89	2251820.48	45.00	0.00
								6259574.43	2251821.78	45.00	0.00
								6259566.24	2250876.63	45.00	0.00
								6259624.83	2250876.63	45.00	0.00
								6259623.53	2250767.26	45.00	0.00
								6259615.72	2250767.26	45.00	0.00
								6259618.32	2250754.23	45.00	0.00
								6259607.91	2250752.93	45.00	0.00
								6259606.61	2250725.59	45.00	0.00
								6259577.96	2250725.59	45.00	0.00
								6259579.26	2250717.78	45.00	0.00
								6258834.47	2250730.80	45.00	0.00
								6258835.77	2250763.35	45.00	0.00
								6258826.66	2250765.95	45.00	0.00
								6258827.96	2250775.07	45.00	0.00
								6258817.54	2250776.37	45.00	0.00
								6258822.75	2250885.74	45.00	0.00
								6258880.04	2250885.74	45.00	0.00
								6258890.46	2251828.45	45.00	0.00
								6258827.96	2251831.06	45.00	0.00
								6258829.26	2251880.54	45.00	0.00
								6258837.07	2251879.23	45.00	0.00
								6258838.38	2251896.16	45.00	0.00
								6258844.89	2251896.16	45.00	0.00
BUILDING		BUILDING00002	x	0		25.00	a	6258637.54	2252210.84	25.00	0.00
								6258681.87	2252210.33	25.00	0.00
								6258681.36	2252111.30	25.00	0.00
								6258636.28	2252111.30	25.00	0.00
BUILDING		BUILDING00003	x	0		25.00	a	6258765.70	2252269.85	25.00	0.00
								6258886.26	2252269.60	25.00	0.00
								6258885.51	2252209.57	25.00	0.00
								6258765.45	2252211.34	25.00	0.00
BUILDING		BUILDING00004	x	0		25.00	a	6258939.96	2252234.14	25.00	0.00
								6258985.04	2252233.63	25.00	0.00
								6258983.52	2252135.10	25.00	0.00
								6258938.44	2252135.61	25.00	0.00
BUILDING		BUILDING00005	x	0		25.00	a	6259076.48	2252232.62	25.00	0.00
								6259121.56	2252232.36	25.00	0.00
								6259120.80	2252132.83	25.00	0.00
								6259075.46	2252133.59	25.00	0.00
BUILDING		BUILDING00006	x	0		25.00	a	6259276.57	2252247.31	25.00	0.00
								6259376.36	2252246.04	25.00	0.00
								6259376.11	2252187.28	25.00	0.00
								6259276.57	2252188.29	25.00	0.00
BUILDING		BUILDING00007	x	0		25.00	a	6259438.92	2252243.26	25.00	0.00
								6259498.70	2252242.24	25.00	0.00
								6259497.94	2252202.98	25.00	0.00
								6259438.16	2252203.24	25.00	0.00
BUILDING		BUILDING00008	x	0		25.00	a	6259572.15	2252258.71	25.00	0.00
								6259605.07	2252257.69	25.00	0.00
								6259604.82	2252260.48	25.00	0.00
								6259648.64	2252259.97	25.00	0.00
								6259648.38	2252257.69	25.00	0.00
								6259685.11	2252256.68	25.00	0.00
								6259684.86	2252214.63	25.00	0.00
								6259571.64	2252216.41	25.00	0.00
BUILDING		BUILDING00009	x	0		25.00	a	6259789.21	2252230.08	25.00	0.00
								6259810.74	2252230.08	25.00	0.00
								6259810.23	2252119.65	25.00	0.00
								6259778.57	2252120.16	25.00	0.00
								6259779.33	2252225.27	25.00	0.00
								6259789.46	2252225.27	25.00	0.00

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS

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13998 - Ramona Gateway Commerce Center

CadnaA Noise Prediction Model: 13998_05_Construction.cna
Date: 16.03.22
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 (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	75.5	75.5	82.2	80.0	60.0	0.0				5.00	a	6259920.31	2252784.09	5.00
RECEIVERS		R2	74.4	74.4	81.1	80.0	60.0	0.0				5.00	a	6260576.74	2251019.92	5.00
RECEIVERS		R3	83.5	83.5	90.2	80.0	60.0	0.0				5.00	a	6259810.65	2250557.12	5.00
RECEIVERS		R4	84.3	84.3	90.9	80.0	60.0	0.0				5.00	a	6259207.19	2250547.05	5.00
RECEIVERS		R5	69.2	69.2	75.8	80.0	60.0	0.0				5.00	a	6257425.14	2249822.33	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)		
CONSTRUCTION		CONSTRUCTION	138.9	138.9	138.9	85.0	85.0	85.0	Lw"	85					8	a

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
CONSTRUCTION	8.00	a			6259205.61	2250562.27	8.00	0.00
					6258596.06	2250551.13	8.00	0.00
					6258533.92	2250551.12	8.00	0.00
					6258533.37	2250728.77	8.00	0.00
					6258530.76	2250903.75	8.00	0.00
					6258525.64	2251247.28	8.00	0.00
					6258535.43	2252303.01	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6258536.98	2252449.46	8.00	0.00
			6259928.19	2252432.64	8.00	0.00
			6259929.13	2252271.19	8.00	0.00
			6259927.87	2252135.52	8.00	0.00
			6259926.31	2251967.73	8.00	0.00
			6259924.76	2251799.93	8.00	0.00
			6259923.20	2251632.14	8.00	0.00
			6259921.64	2251464.35	8.00	0.00
			6259920.09	2251296.55	8.00	0.00
			6259918.53	2251128.76	8.00	0.00
			6259916.97	2250960.97	8.00	0.00
			6259915.42	2250793.18	8.00	0.00
			6259913.33	2250575.64	8.00	0.00
			6259819.90	2250573.60	8.00	0.00

APPENDIX 10.2:

CADNAA MITIGATED CONSTRUCTION NOISE MODEL INPUTS

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13998 - Ramona Gateway Commerce Center

CadnaA Noise Prediction Model: 13998_05_Construction_Mitigated.cna
Date: 16.03.22
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 (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	75.5	75.5	82.2	80.0	60.0	0.0				5.00	a	6259920.31	2252784.09	5.00
RECEIVERS		R2	74.4	74.4	81.1	80.0	60.0	0.0				5.00	a	6260576.74	2251019.92	5.00
RECEIVERS		R3	78.1	78.1	84.8	80.0	60.0	0.0				5.00	a	6259810.65	2250557.12	5.00
RECEIVERS		R4	77.6	77.6	84.3	80.0	60.0	0.0				5.00	a	6259207.19	2250547.05	5.00
RECEIVERS		R5	68.4	68.4	75.1	80.0	60.0	0.0				5.00	a	6257425.14	2249822.33	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)		
CONSTRUCTION		CONSTRUCTION	138.9	138.9	138.9	85.0	85.0	85.0	Lw"	85					8	a

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
CONSTRUCTION	8.00	a		6259205.61	2250562.27	8.00	0.00
				6258596.06	2250551.13	8.00	0.00
				6258533.92	2250551.12	8.00	0.00
				6258533.37	2250728.77	8.00	0.00
				6258530.76	2250903.75	8.00	0.00
				6258525.64	2251247.28	8.00	0.00
				6258535.43	2252303.01	8.00	0.00

Name	Height			Coordinates			
	Begin	End		x	y	z	Ground
	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
				6258536.98	2252449.46	8.00	0.00
				6259928.19	2252432.64	8.00	0.00
				6259929.13	2252271.19	8.00	0.00
				6259927.87	2252135.52	8.00	0.00
				6259926.31	2251967.73	8.00	0.00
				6259924.76	2251799.93	8.00	0.00
				6259923.20	2251632.14	8.00	0.00
				6259921.64	2251464.35	8.00	0.00
				6259920.09	2251296.55	8.00	0.00
				6259918.53	2251128.76	8.00	0.00
				6259916.97	2250960.97	8.00	0.00
				6259915.42	2250793.18	8.00	0.00
				6259913.33	2250575.64	8.00	0.00
				6259819.90	2250573.60	8.00	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)
BARRIERCONS		0						8.00	a		6259825.35	2250569.24	8.00	0.00
											6258596.06	2250546.77	8.00	0.00

APPENDIX 10.3:

CADNAA MITIGATED CONCRETE POUR NOISE MODEL INPUTS

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13998 - Ramona Gateway Commerce Center

CadnaA Noise Prediction Model: 13998_05_ConcretePour_Mitigated.cna
Date: 16.03.22
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 (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	69.0	69.0	75.7	80.0	60.0	0.0				5.00	a	6259920.31	2252784.09	5.00
RECEIVERS		R2	69.5	69.5	76.2	80.0	60.0	0.0				5.00	a	6260576.74	2251019.92	5.00
RECEIVERS		R3	67.8	67.8	74.5	80.0	60.0	0.0				5.00	a	6259810.65	2250557.12	5.00
RECEIVERS		R4	70.0	70.0	76.6	80.0	60.0	0.0				5.00	a	6259207.19	2250547.05	5.00
RECEIVERS		R5	64.1	64.1	70.8	80.0	60.0	0.0				5.00	a	6257425.14	2249822.33	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)		
BUILDING		BUILDING00001	134.0	134.0	134.0	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00002	111.2	111.2	111.2	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00003	113.2	113.2	113.2	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00004	111.2	111.2	111.2	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00005	111.2	111.2	111.2	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00006	112.4	112.4	112.4	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00007	108.4	108.4	108.4	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00008	111.6	111.6	111.6	85.0	85.0	85.0	Lw"	85					8	a
BUILDING		BUILDING00009	110.0	110.0	110.0	85.0	85.0	85.0	Lw"	85					8	a

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING	8.00	a			6258847.34	2251924.35	8.00	0.00
					6258875.98	2251923.31	8.00	0.00
					6258876.51	2251930.60	8.00	0.00
					6259590.49	2251923.78	8.00	0.00
					6259590.49	2251916.83	8.00	0.00
					6259619.14	2251916.83	8.00	0.00
					6259619.14	2251887.75	8.00	0.00
					6259628.69	2251886.88	8.00	0.00
					6259628.25	2251873.86	8.00	0.00
					6259635.20	2251873.43	8.00	0.00
					6259633.89	2251820.48	8.00	0.00
					6259574.43	2251821.78	8.00	0.00
					6259566.24	2250876.63	8.00	0.00
					6259624.83	2250876.63	8.00	0.00
					6259623.53	2250767.26	8.00	0.00
					6259615.72	2250767.26	8.00	0.00
					6259618.32	2250754.23	8.00	0.00
					6259607.91	2250752.93	8.00	0.00
					6259606.61	2250725.59	8.00	0.00
					6259577.96	2250725.59	8.00	0.00
					6259579.26	2250717.78	8.00	0.00
					6258834.47	2250730.80	8.00	0.00
					6258835.77	2250763.35	8.00	0.00
					6258826.66	2250765.95	8.00	0.00
					6258827.96	2250775.07	8.00	0.00
					6258817.54	2250776.37	8.00	0.00
					6258822.75	2250885.74	8.00	0.00
					6258880.04	2250885.74	8.00	0.00
					6258890.46	2251828.45	8.00	0.00
					6258827.96	2251831.06	8.00	0.00
					6258829.26	2251880.54	8.00	0.00
					6258837.07	2251879.23	8.00	0.00
					6258838.38	2251896.16	8.00	0.00
					6258844.89	2251896.16	8.00	0.00
BUILDING	8.00	a			6258637.54	2252210.84	8.00	0.00
					6258681.87	2252210.33	8.00	0.00
					6258681.36	2252111.30	8.00	0.00
					6258636.28	2252111.30	8.00	0.00
BUILDING	8.00	a			6258765.70	2252269.85	8.00	0.00
					6258886.26	2252269.60	8.00	0.00
					6258885.51	2252209.57	8.00	0.00
					6258765.45	2252211.34	8.00	0.00
BUILDING	8.00	a			6258939.96	2252234.14	8.00	0.00
					6258985.04	2252233.63	8.00	0.00
					6258983.52	2252135.10	8.00	0.00
					6258938.44	2252135.61	8.00	0.00
BUILDING	8.00	a			6259076.48	2252232.62	8.00	0.00
					6259121.56	2252232.36	8.00	0.00
					6259120.80	2252132.83	8.00	0.00
					6259075.46	2252133.59	8.00	0.00
BUILDING	8.00	a			6259276.57	2252247.31	8.00	0.00
					6259376.36	2252246.04	8.00	0.00
					6259376.11	2252187.28	8.00	0.00
					6259276.57	2252188.29	8.00	0.00
BUILDING	8.00	a			6259438.92	2252243.26	8.00	0.00
					6259498.70	2252242.24	8.00	0.00
					6259497.94	2252202.98	8.00	0.00
					6259438.16	2252203.24	8.00	0.00
BUILDING	8.00	a			6259572.15	2252258.71	8.00	0.00
					6259605.07	2252257.69	8.00	0.00
					6259604.82	2252260.48	8.00	0.00
					6259648.64	2252259.97	8.00	0.00
					6259648.38	2252257.69	8.00	0.00
					6259685.11	2252256.68	8.00	0.00
					6259684.86	2252214.63	8.00	0.00
					6259571.64	2252216.41	8.00	0.00
BUILDING	8.00	a			6259789.21	2252230.08	8.00	0.00
					6259810.74	2252230.08	8.00	0.00
					6259810.23	2252119.65	8.00	0.00
					6259778.57	2252120.16	8.00	0.00
					6259779.33	2252225.27	8.00	0.00
					6259789.46	2252225.27	8.00	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)
BARRIERCONS		0						8.00	a			6259825.35	2250569.24	8.00	0.00
												6258596.06	2250546.77	8.00	0.00

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