Perris DC 11

NOISE AND VIBRATION 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	Perris DC 11
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this Noise and Vibration Analysis to determine the potential noise and vibration impacts and the necessary mitigation measures, if any, for the proposed Perris DC 11 development ("Project"). The Project includes the construction and operation of approximately 551,922 square feet (sf) of a high-cube warehouse facility building space, which would include 5,000 sf of office and mezzanine space. The Project site 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 Perris DC 11 Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Significance Findings	
	Unmitigated	Mitigated
Off-Site Traffic Noise	*Less Than Significant*	-
Operational Noise	*Less Than Significant*	-
Operational Vibration	*Less Than Significant*	-
Construction Noise	*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 Environmental Impact Report.

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1 INTRODUCTION

This Noise and Vibration analysis has been completed to determine the noise impacts associated with the development of the proposed Perris DC 11 project ("Project"). This 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 Perris DC 11 site is located at the southeast intersection of Ramona Expressway and Webster Avenue within the City of Perris' *Perris Valley Commerce Center Specific Plan* (PVCCSP) planning area as shown on Exhibit 1-A. March Air Reserve Base/Inland Port Airport (MARB/IPA) is located approximately 1.4 miles northwest of the Project site boundary. The Project site encompasses approximately 29.79 gross acres and is located south of Ramona Expressway, east of Webster Avenue, west of Brennan Avenue, and north of Morgan Street. Additionally, the site is located within the Perris USGS 7.5-Minute Quadrangle; Section 7, Township 4 South, Range 3 West, San Bernardino Baseline and Meridian.

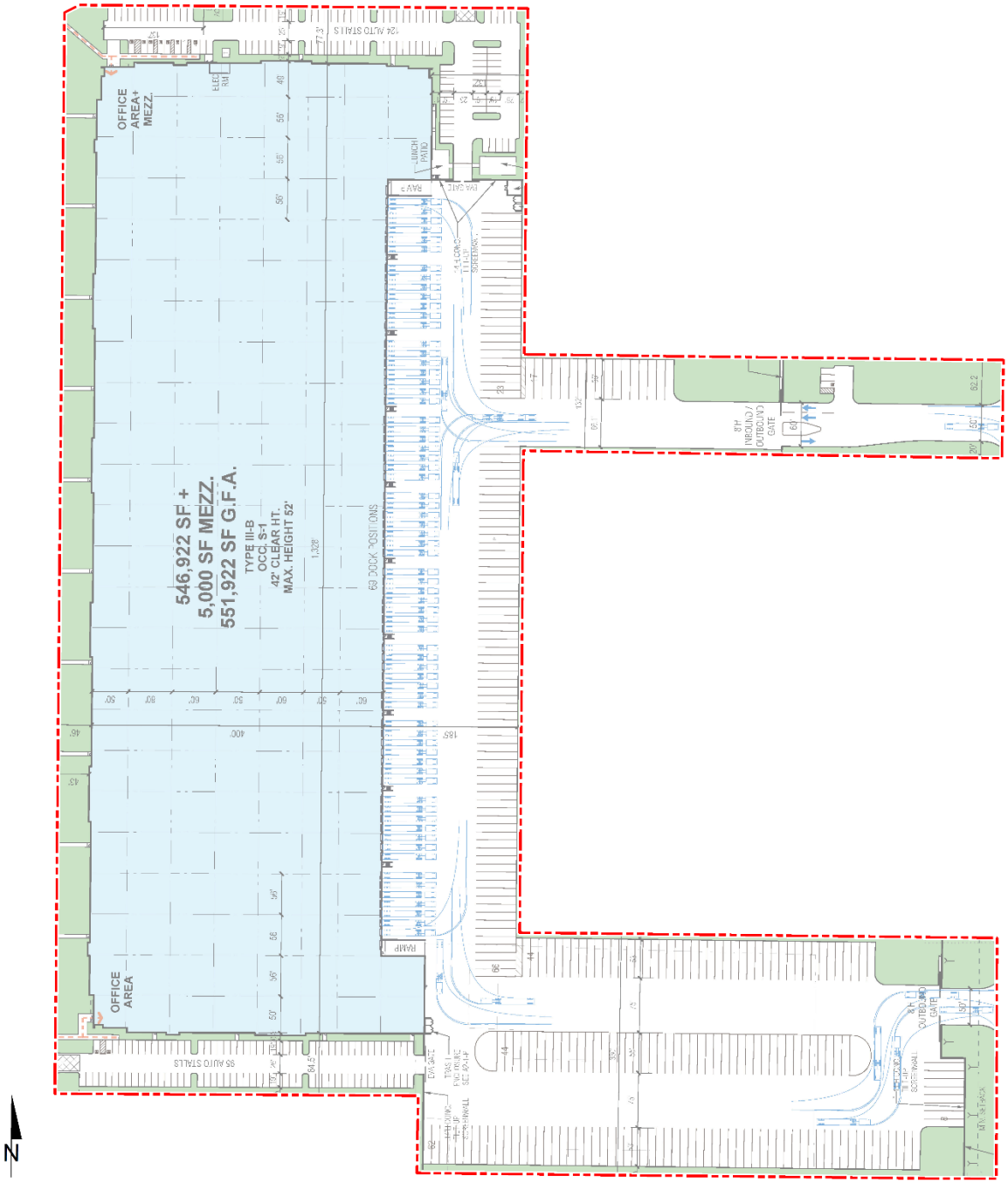
1.2 PROJECT DESCRIPTION

The proposed Project would develop the 29.79-acre site, located in the City of Perris, with a new high-cube warehouse facility and related site improvements. The Project includes construction and operation of approximately 551,922 square feet (sf) of new building space, which would include 5,000 sf of office and mezzanine space. A maximum of 25 percent, or 136,730 sf, of the building could be operated as refrigerated storage. The building would have 69 loading docks located on the eastern side of the structure. The Project would result in a floor area ratio (FAR) of 0.43. The Project would be constructed in one development phase. A preliminary site plan is shown on Exhibit 1-B.

The on-site Project-related noise sources are expected to include: loading dock activity, truck movements, roof-top air conditioning units, trash enclosure activity parking lot vehicle movements and diesel fire pump. 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 would 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: (2)

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). (3) 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 site is not located within the 65 CNEL noise contour of MARB/IPA.

3.3 CITY OF PERRIS GENERAL PLAN NOISE ELEMENT

The City of Perris has adopted a Noise Element of the General Plan (5) 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 use. 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. (5)

3.4 CITY OF PERRIS GOOD NEIGHBOR GUIDELINES

The City of Perris adopted the Good Neighbor Guidelines for Siting New and/or Modified Industrial Facilities in September 2022 that aim to balance economic growth, industrial development, and business success while implementing methods for the reduction of potential negative impacts on sensitive receptors. The City of Perris Good Neighbor Guidelines goals and recommended policies formalize what is expected from industrial development, particularly those closer to sensitive receptors.

The City of Perris Good Neighbor Guidelines policies that address noise and that are applicable to the Project include the following:

Goal 1 Protect the neighborhood characteristics of the urban, rural, and suburban communities.

Policy 1.3 When possible, locate driveways, loading docks, and internal circulation routes away from sensitive receptors.

Policy 1.4 Truck loading bays and drive aisles shall be designed to minimize truck noise.

Policy 1.6 If a public address (PA) system is being used in conjunction with a warehouse/distribution facility operation, the PA system shall be oriented away from sensitive receptors and the volume set at a level not readily audible past the property line.

Policy 1.16 Signs shall be installed at all truck exit driveways directing truck drivers to the truck route as indicated in the City approved Truck Routing Plan and State Highway System to minimize potential impacts on sensitive receptors.

Policy 1.19 Signs and drive aisle pavement markings shall clearly identify the onsite circulation pattern to minimize unnecessary on-site vehicular travel.

Goal 2 Minimize exposure of diesel emissions to neighbors that are situated in close proximity to the warehouse/distribution center.

Policy 2.3 Avoid locating exits and entries near sensitive receptors.

Policy 2.8 Truck operators with TRUs shall be required to utilize electric plug-in units when at loading docks.

Policy 2.11 Equipment operator of a TRU (Transportation Refrigeration Unit) shall not cause a TRU to operate while stationary unless the vehicle is lawfully parked and not within 500 feet of a school, unless the operator is actively engaged in the process of loading or unloading cargo or is waiting in a queue to load or unload for a period not to exceed 2 hours

Policy 2.13 Post signs requiring to turn off truck engines when not in use.

Goal 3 Eliminate diesel trucks from unnecessary traversing through residential neighborhoods.

Policy 3.1 The facility operator shall abide by the truck routing plans, consistent with the City of Perris Truck Route Plan.

Policy 3.3 Truck traffic shall be routed to impact the least number of sensitive receptors.

Goal 4 Provide Buffers between Warehouses and Sensitive Receptors

Policy 4.1 A separation of at least 300 feet shall be provided, as measured from the dock doors to the nearest property line of the sensitive receptor.

Policy 4.4 Loading areas shall be screened with a 14-foot-high decorative block wall, architecturally consistent with the building, and an 8-foot high berming in front of the wall to soften the view of the wall from the public right of way.

Policy 4.10 Require on-site signage for directional guidance to trucks entering and exiting the facility to minimize potential impacts on sensitive receptors.

Goal 6 Implement Construction Practice Requirements in Accordance with State Requirements to Limit Emissions and Noise Impacts from Building Demolition, Renovation, and New Construction

Policy 6.1 In addition to regular construction inspections conducted by City Departments, the applicant shall provide monthly reports to the City demonstrating compliance with all the construction related policies.

Policy 6.3 Construction contractor shall utilize construction equipment with properly operating and maintained mufflers, consistent with manufacturer's standards.

Policy 6.4 Construction contractors shall locate or park all stationary construction equipment away from sensitive receptors nearest the project site, to the extent practicable.

Policy 6.8 Prepare a construction traffic control plan prior to grading, detailing the locations of equipment staging areas material stockpiles, proposed road closures, and hours of construction operations to minimize impacts to sensitive receptors.

Policy 6.9 Minimize noise from construction activities.

Policy 6.12 Designate an area of the construction site where electric-powered construction vehicles and equipment can charge if the utility provider can feasibly provide temporary power for this purpose.

3.5 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Perris DC 11, operational noise such as the expected loading dock activity, truck movements, roof-top air conditioning units, trash enclosure activity parking lot vehicle movements and diesel fire pump 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. (6) 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.

3.6 CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of the Perris DC 11 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. (6)

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).

3.7 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.

All projects within the PVCCSP planning area are required to comply with the following construction-related mitigation measures from the PVCCSP EIR whether or not the impacts of that project are potentially significant:

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.*

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

The MARB/IPA runway is located approximately 1.4 miles northwest of the Project site. The *Riverside County Airport Land Use Compatibility Plan Policy Document* (RC ALUCP) includes the policies for determining the land use compatibility of the Project. Policy 4.1.5 *Noise Exposure for Other Land Uses* of the RC ALUCP requires that land uses demonstrate compatibility with the acceptable noise levels on Table 2B. Table 2B *Supporting Compatibility Criteria: Noise* matrix is shown on Exhibit 3-A and indicates that the Project's industrial land uses experience *clearly acceptable* exterior noise levels below 60 dBA CNEL. *Normally acceptable* noise levels for industrial land use range from 60 to 65 dBA CNEL. *Marginally acceptable* noise levels at industrial land uses range from 65 to 70 dBA CNEL. (7)

The 70, 65 and 60 dBA CNEL noise contour boundaries used to determine the potential aircraft-related noise impacts at the Project site are found on Figure 6-9 of the *March Air Reserve Base 2018 Final Air Installations Compatible Uses Zones Study* and are presented on Exhibit 3-B of this report. (8) Based on the 2018 noise level contours for MARB/IPA, the Project development area is located outside the 65 dBA CNEL noise level contour boundaries and the Project's industrial land use is considered *normally acceptable.*

EXHIBIT 3-A: RC ALUCP SUPPORTING COMPATIBILITY CRITERIA: NOISE

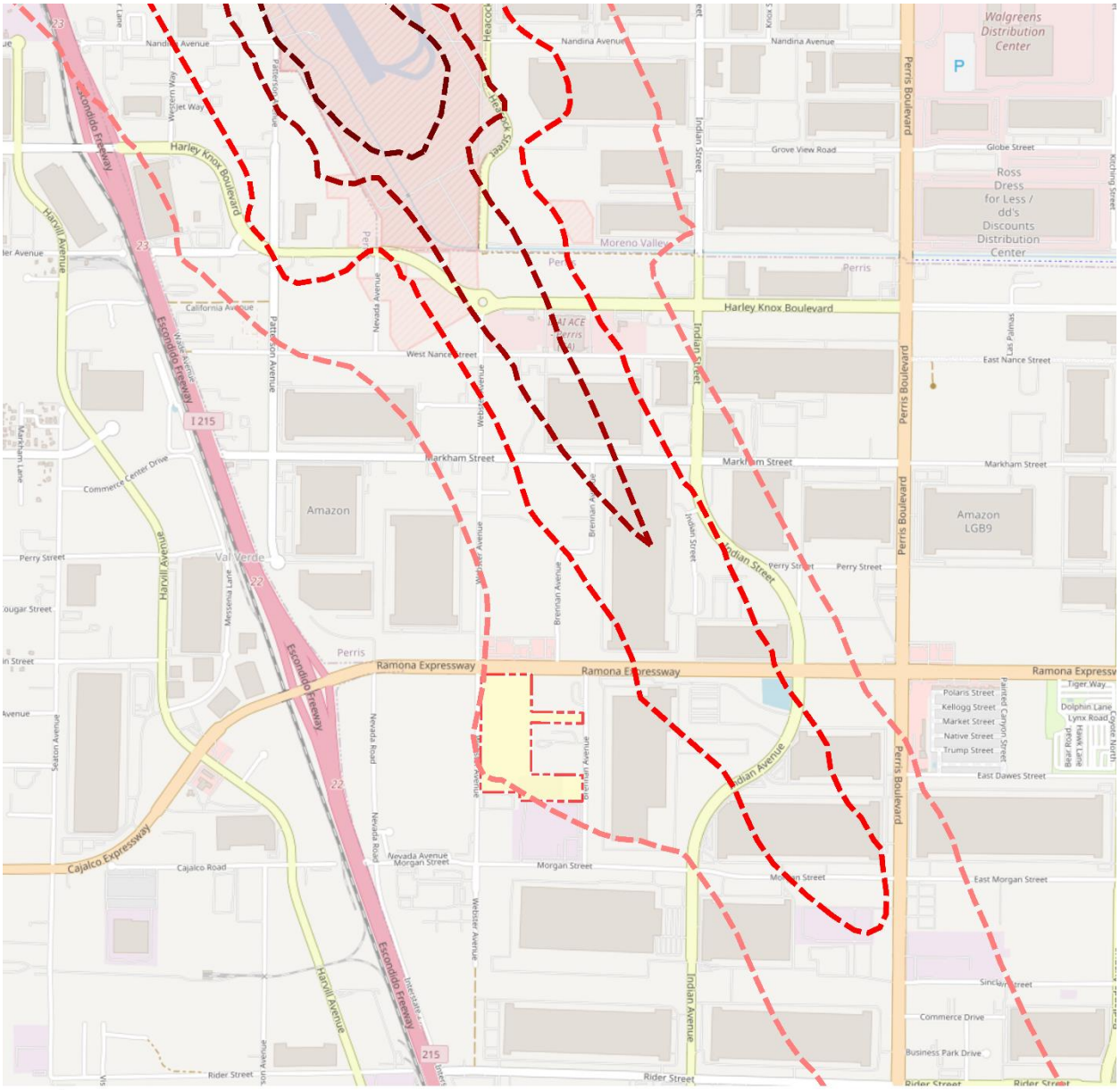
	CNEL (dB)				
Land Use Category	**50–55**	**55–60**	**60–65**	**65–70**	**70–75**
Residential *					
single-family, nursing homes, mobile homes	++	o	–	– –	– –
multi-family, apartments, condominiums	++	+	o	– –	– –
Public					
schools, libraries, hospitals	+	o	–	– –	– –
churches, auditoriums, concert halls	+	o	o	–	– –
transportation, parking, cemeteries	++	++	++	+	o
Commercial and Industrial					
offices, retail trade	++	+	o	o	–
service commercial, wholesale trade, warehousing, light industrial	++	++	+	o	o
general manufacturing, utilities, extractive industry	++	++	++	+	+
Agricultural and Recreational					
cropland	++	++	++	++	+
livestock breeding	++	+	o	o	–
parks, playgrounds, zoos	++	+	+	o	–
golf courses, riding stables, water recreation	++	++	+	o	o
outdoor spectator sports	++	+	+	o	–
amphitheaters	+	o	–	– –	– –

Land Use Acceptability		**Interpretation/Comments**
++	*Clearly Acceptable*	The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.
+	*Normally Acceptable*	Noise is a factor to be considered in that slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.
o	*Marginally Acceptable*	The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the conditions that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged.
–	*Normally Unacceptable*	Noise will create substantial interference with both outdoor and indoor activities. Noise intrusion upon indoor activities can be mitigated by requiring special noise insulation construction. Land uses which have conventionally constructed structures and/or involve outdoor activities which would be disrupted by noise should generally be avoided.
– –	*Clearly Unacceptable*	Unacceptable noise intrusion upon land use activities will occur. Adequate structural noise insulation is not practical under most circumstances. The indicated land use should be avoided unless strong overriding factors prevail and it should be prohibited if outdoor activities are involved.

* Subtract 5 dB for low-activity outlying airports (Chiriaco Summit and Desert Center)

Source: Riverside County Airport Land Use Compatibility Plan, Table 2B.

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



LEGEND:

Unmitigated MARB Noise Level Contour Boundaries

- Project Site Boundary
- 75 dBA CNEL
- 70 dBA CNEL
- 65 dBA CNEL
- 60 dBA CNEL

Source: Figure 6-9 of the March Air Reserve Base 2018 Final Air Installations Compatible Uses Zones Study.

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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 CEQA Guidelines Appendix G noise Guideline 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 Significance Criteria C is MARB/IPA. As previously indicated in Section 3.7, the noise contour boundaries of MARB/IPA presented on Exhibit 3-B of this report show that the Project's industrial land use is considered *normally acceptable* since the development area is located outside the 65 dBA CNEL contour. Therefore, the potential Project impacts are considered *less than significant,* and no further noise analysis is provided under State CEQA Guidelines Significance Criteria C.

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 of significance 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. (2) 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 noise level impacts at the nearby Val Verde Regional Learning Center and Val Verde High School 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]	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]	80 dBA L_{max}	
		Vibration Level Threshold[5]	0.5 PPV (in/sec)	

[1] PVCC SP 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] PVCC SP EIR, Page 4.9-27.
"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 five locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday May 17, 2023. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (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 equivalent or the energy average hourly sound levels (L_{eq}). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location. Appendix 5.2 provides a summary of the existing hourly ambient noise levels.

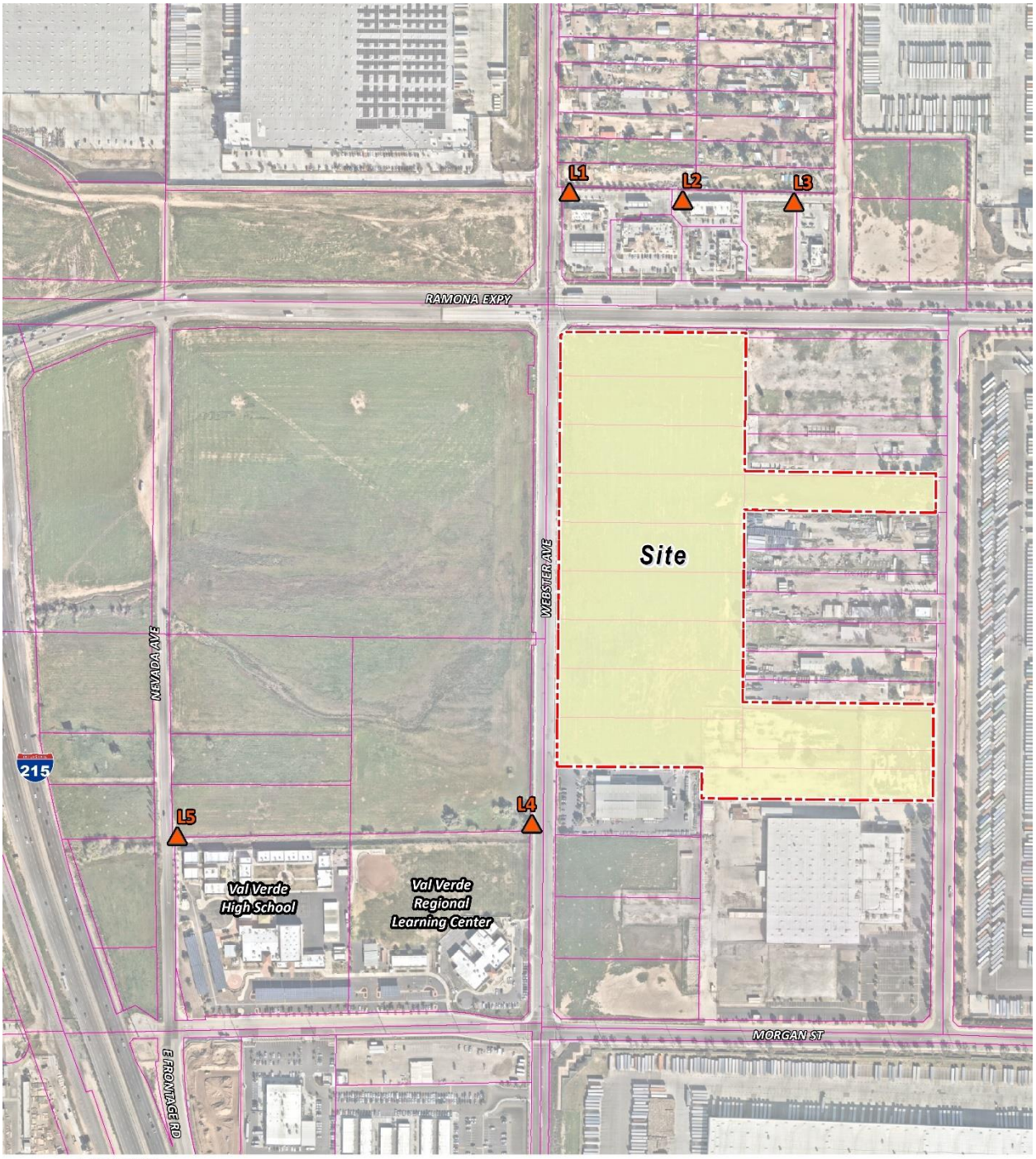
TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

Location[1]	Description	Energy Average Noise Level (dBA L_{eq})[2]	
		Daytime	Nighttime
L1	Located north of the site near the residence at 4063 Webster Ave.	68.9	64.4
L2	Located north of the site near the commercial building at 764 Ramona Expy.	63.8	59.5
L3	Located north of the site near the retail building at 736 Ramona Expy.	64.1	59.1
L4	Located southwest of the site near the educational facility at 3710 Webster Ave.	62.8	62.1
L5	Located southwest of the site near the Val Verde High School at 972 Morgan St.	69.3	63.2

[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. - 10:00 p.m.; "Nighttime" = 10:01 p.m. - 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 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate 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 10 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 *Perris DC 11 Traffic Impact Analysis*, prepared by EPD Solutions, Inc. for the following traffic scenarios (16):

- Existing (2022)
- Existing Plus Project (E+P)
- Opening Year without Project (OYC)
- Opening Year with Project (OYC+P)

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	Webster Av.	s/o Ramona Expy	Secondary Arterial	Non-Sensitive	47'	35
2	Webster Av.	n/o Morgan St.	Secondary Arterial	Non-Sensitive	47'	35
3	Brennan Av.	s/o Ramona Expy	Collector	Non-Sensitive	33'	35
4	Brennan Av.	n/o Project Dwy. 4	Collector	Non-Sensitive	33'	35
5	Brennan Av.	n/o Morgan St.	Collector	Non-Sensitive	33'	35
6	Indian Av.	n/o Ramona Expy	Secondary Arterial	Non-Sensitive	47'	40
7	Indian Av.	s/o Ramona Expy	Secondary Arterial	Non-Sensitive	47'	40
8	Ramona Expy.	e/o Webster Av.	Expressway	Non-Sensitive	92'	50
9	Ramona Expy.	w/o Indian Av.	Expressway	Non-Sensitive	92'	50
10	Ramona Expy.	e/o Indian Av.	Expressway	Non-Sensitive	92'	50

[1] Ramona and Webster Traffic Impact Analysis Report, EPD Solutions, Inc.
[2] Based on a review of existing aerial imagery.
[3] Distance to receiving land use is based upon the right-of-way distances.

To quantify the off-site noise levels, the Project-related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits.

The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-6 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		Opening Year	
			Without Project	With Project	Without Project	With Project
1	Webster Av.	s/o Ramona Expy	2,260	2,756	2,400	2,896
2	Webster Av.	n/o Morgan St.	2,260	2,260	2,400	2,400
3	Brennan Av.	s/o Ramona Expy	100	100	140	140
4	Brennan Av.	n/o Project Dwy. 4	60	180	100	220
5	Brennan Av.	n/o Morgan St.	410	567	440	597
6	Indian Av.	n/o Ramona Expy	4,690	4,819	5,760	5,889
7	Indian Av.	s/o Ramona Expy	6,150	6,206	7,190	7,246
8	Ramona Expy.	e/o Webster Av.	27,910	27,910	31,390	31,390
9	Ramona Expy.	w/o Indian Av.	28,440	28,936	31,950	32,446
10	Ramona Expy.	e/o Indian Av.	28,000	28,496	32,000	32,495

[1] Ramona and Webster Traffic Impact Analysis Report, EPD Solutions, 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	77.37%	11.63%	11.00%	100.00%
Medium Trucks	81.03%	7.27%	11.70%	100.00%
Heavy Trucks	85.44%	9.74%	4.82%	100.00%

[1] 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.
"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow[1]			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	77.12%	10.68%	12.20%	100.00%

[1] 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 WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Webster Av.	s/o Ramona Expy	81.23%	8.76%	10.01%	100.00%
2	Webster Av.	n/o Morgan St.	77.12%	10.68%	12.20%	100.00%
3	Brennan Av.	s/o Ramona Expy	77.12%	10.68%	12.20%	100.00%
4	Brennan Av.	n/o Project Dwy. 4	25.67%	26.90%	47.43%	100.00%
5	Brennan Av.	n/o Morgan St.	55.74%	17.42%	26.84%	100.00%
6	Indian Av.	n/o Ramona Expy	75.04%	11.33%	13.62%	100.00%
7	Indian Av.	s/o Ramona Expy	76.43%	10.90%	12.68%	100.00%
8	Ramona Expy.	e/o Webster Av.	77.12%	10.68%	12.20%	100.00%
9	Ramona Expy.	w/o Indian Av.	77.51%	10.50%	12.00%	100.00%
10	Ramona Expy.	e/o Indian Av.	77.51%	10.50%	11.99%	100.00%

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

TABLE 6-6: OPENING YEAR WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Webster Av.	s/o Ramona Expy	81.03%	8.85%	10.12%	100.00%
2	Webster Av.	n/o Morgan St.	77.12%	10.68%	12.20%	100.00%
3	Brennan Av.	s/o Ramona Expy	77.12%	10.68%	12.20%	100.00%
4	Brennan Av.	n/o Project Dwy. 4	35.01%	23.96%	41.03%	100.00%
5	Brennan Av.	n/o Morgan St.	56.81%	17.08%	26.10%	100.00%
6	Indian Av.	n/o Ramona Expy	75.42%	11.22%	13.36%	100.00%
7	Indian Av.	s/o Ramona Expy	76.52%	10.87%	12.61%	100.00%
8	Ramona Expy.	e/o Webster Av.	77.12%	10.68%	12.20%	100.00%
9	Ramona Expy.	w/o Indian Av.	77.46%	10.52%	12.02%	100.00%
10	Ramona Expy.	e/o Indian Av.	77.46%	10.52%	12.02%	100.00%

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

7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with the development of the proposed Project, noise contours were developed based on the *Perris DC 11 Traffic Impact Analysis* prepared by EPD Solutions, Inc. (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 7-4 present a summary of the exterior dBA CNEL traffic noise levels for each traffic condition. Appendix 7.1 includes a summary of the dBA CNEL traffic noise level contour worksheets for each of the traffic conditions.

TABLE 7-1: EXISTING WITHOUT PROJECT 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	Webster Av.	s/o Ramona Expy	Non-Sensitive	65.8	25	53	114
2	Webster Av.	n/o Morgan St.	Non-Sensitive	65.8	25	53	114
3	Brennan Av.	s/o Ramona Expy	Non-Sensitive	53.2	3	5	12
4	Brennan Av.	n/o Project Dwy. 4	Non-Sensitive	51.0	2	4	8
5	Brennan Av.	n/o Morgan St.	Non-Sensitive	59.3	6	14	30
6	Indian Av.	n/o Ramona Expy	Non-Sensitive	70.0	47	101	218
7	Indian Av.	s/o Ramona Expy	Non-Sensitive	71.2	56	121	261
8	Ramona Expy.	e/o Webster Av.	Non-Sensitive	75.7	222	478	1030
9	Ramona Expy.	w/o Indian Av.	Non-Sensitive	75.8	225	484	1043
10	Ramona Expy.	e/o Indian Av.	Non-Sensitive	75.7	222	479	1032

[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 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	Webster Av.	s/o Ramona Expy	Non-Sensitive	65.9	25	54	116
2	Webster Av.	n/o Morgan St.	Non-Sensitive	65.8	25	53	114
3	Brennan Av.	s/o Ramona Expy	Non-Sensitive	53.2	3	5	12
4	Brennan Av.	n/o Project Dwy. 4	Non-Sensitive	60.8	8	17	37
5	Brennan Av.	n/o Morgan St.	Non-Sensitive	63.6	12	26	57
6	Indian Av.	n/o Ramona Expy	Non-Sensitive	70.5	50	109	234
7	Indian Av.	s/o Ramona Expy	Non-Sensitive	71.3	58	124	267
8	Ramona Expy.	e/o Webster Av.	Non-Sensitive	75.7	222	478	1030
9	Ramona Expy.	w/o Indian Av.	Non-Sensitive	75.8	225	485	1045
10	Ramona Expy.	e/o Indian Av.	Non-Sensitive	75.8	223	480	1034

[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: OPENING YEAR WITHOUT PROJECT 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	Webster Av.	s/o Ramona Expy	Non-Sensitive	66.0	26	55	118
2	Webster Av.	n/o Morgan St.	Non-Sensitive	66.0	26	55	118
3	Brennan Av.	s/o Ramona Expy	Non-Sensitive	54.7	3	7	15
4	Brennan Av.	n/o Project Dwy. 4	Non-Sensitive	53.2	3	5	12
5	Brennan Av.	n/o Morgan St.	Non-Sensitive	59.6	7	14	31
6	Indian Av.	n/o Ramona Expy	Non-Sensitive	70.9	54	116	250
7	Indian Av.	s/o Ramona Expy	Non-Sensitive	71.8	62	134	290
8	Ramona Expy.	e/o Webster Av.	Non-Sensitive	76.2	240	517	1114
9	Ramona Expy.	w/o Indian Av.	Non-Sensitive	76.3	243	523	1127
10	Ramona Expy.	e/o Indian Av.	Non-Sensitive	76.3	243	524	1128

[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: OPENING YEAR WITH PROJECT 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	Webster Av.	s/o Ramona Expy	Non-Sensitive	66.1	26	56	121
2	Webster Av.	n/o Morgan St.	Non-Sensitive	66.0	26	55	118
3	Brennan Av.	s/o Ramona Expy	Non-Sensitive	54.7	3	7	15
4	Brennan Av.	n/o Project Dwy. 4	Non-Sensitive	61.1	8	18	39
5	Brennan Av.	n/o Morgan St.	Non-Sensitive	63.7	13	27	58
6	Indian Av.	n/o Ramona Expy	Non-Sensitive	71.3	57	123	265
7	Indian Av.	s/o Ramona Expy	Non-Sensitive	72.0	64	137	296
8	Ramona Expy.	e/o Webster Av.	Non-Sensitive	76.2	240	517	1114
9	Ramona Expy.	w/o Indian Av.	Non-Sensitive	76.3	243	524	1129
10	Ramona Expy.	e/o Indian Av.	Non-Sensitive	76.3	244	525	1130

[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 *Perris DC 11 Traffic Impact Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 51.0 to 75.8 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 53.2 to 75.8 dBA CNEL. Table 7-5 shows that the Project off-site traffic noise level impacts will range from 0.0 to 9.8 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.

7.3 OPENING YEAR PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year without Project conditions CNEL noise levels. The Opening Year without Project exterior noise levels are expected to range from 53.2 to 76.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the Opening Year with Project conditions will range from 54.7 to 76.3 dBA CNEL. Table 7-6 shows that the Project off-site traffic noise level increases will range from 0.0 to 7.9 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 7-5: 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	Webster Av.	s/o Ramona Expy	Non-Sensitive	65.8	65.9	0.1	n/a	No
2	Webster Av.	n/o Morgan St.	Non-Sensitive	65.8	65.8	0.0	n/a	No
3	Brennan Av.	s/o Ramona Expy	Non-Sensitive	53.2	53.2	0.0	n/a	No
4	Brennan Av.	n/o Project Dwy. 4	Non-Sensitive	51.0	60.8	9.8	n/a	No
5	Brennan Av.	n/o Morgan St.	Non-Sensitive	59.3	63.6	4.3	n/a	No
6	Indian Av.	n/o Ramona Expy	Non-Sensitive	70.0	70.5	0.5	n/a	No
7	Indian Av.	s/o Ramona Expy	Non-Sensitive	71.2	71.3	0.1	n/a	No
8	Ramona Expy.	e/o Webster Av.	Non-Sensitive	75.7	75.7	0.0	n/a	No
9	Ramona Expy.	w/o Indian Av.	Non-Sensitive	75.8	75.8	0.0	n/a	No
10	Ramona Expy.	e/o Indian Av.	Non-Sensitive	75.7	75.8	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)?

TABLE 7-6: OPENING YEAR 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	Webster Av.	s/o Ramona Expy	Non-Sensitive	66.0	66.1	0.1	n/a	No
2	Webster Av.	n/o Morgan St.	Non-Sensitive	66.0	66.0	0.0	n/a	No
3	Brennan Av.	s/o Ramona Expy	Non-Sensitive	54.7	54.7	0.0	n/a	No
4	Brennan Av.	n/o Project Dwy. 4	Non-Sensitive	53.2	61.1	7.9	n/a	No
5	Brennan Av.	n/o Morgan St.	Non-Sensitive	59.6	63.7	4.1	n/a	No
6	Indian Av.	n/o Ramona Expy	Non-Sensitive	70.9	71.3	0.4	n/a	No
7	Indian Av.	s/o Ramona Expy	Non-Sensitive	71.8	72.0	0.2	n/a	No
8	Ramona Expy.	e/o Webster Av.	Non-Sensitive	76.2	76.2	0.0	n/a	No
9	Ramona Expy.	w/o Indian Av.	Non-Sensitive	76.3	76.3	0.0	n/a	No
10	Ramona Expy.	e/o Indian Av.	Non-Sensitive	76.3	76.3	0.0	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)?

8 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise 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. This includes the legal non-conforming uses east of the Project site on Brennan Avenue. Consistent with direction from the City of Perris, the land uses along Brennan Avenue can best be described as nearby worker/non-sensitive receivers since these locations are zoned and operate light industrial land uses within their parcels.

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 Avenue, approximately 508 feet north of the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.

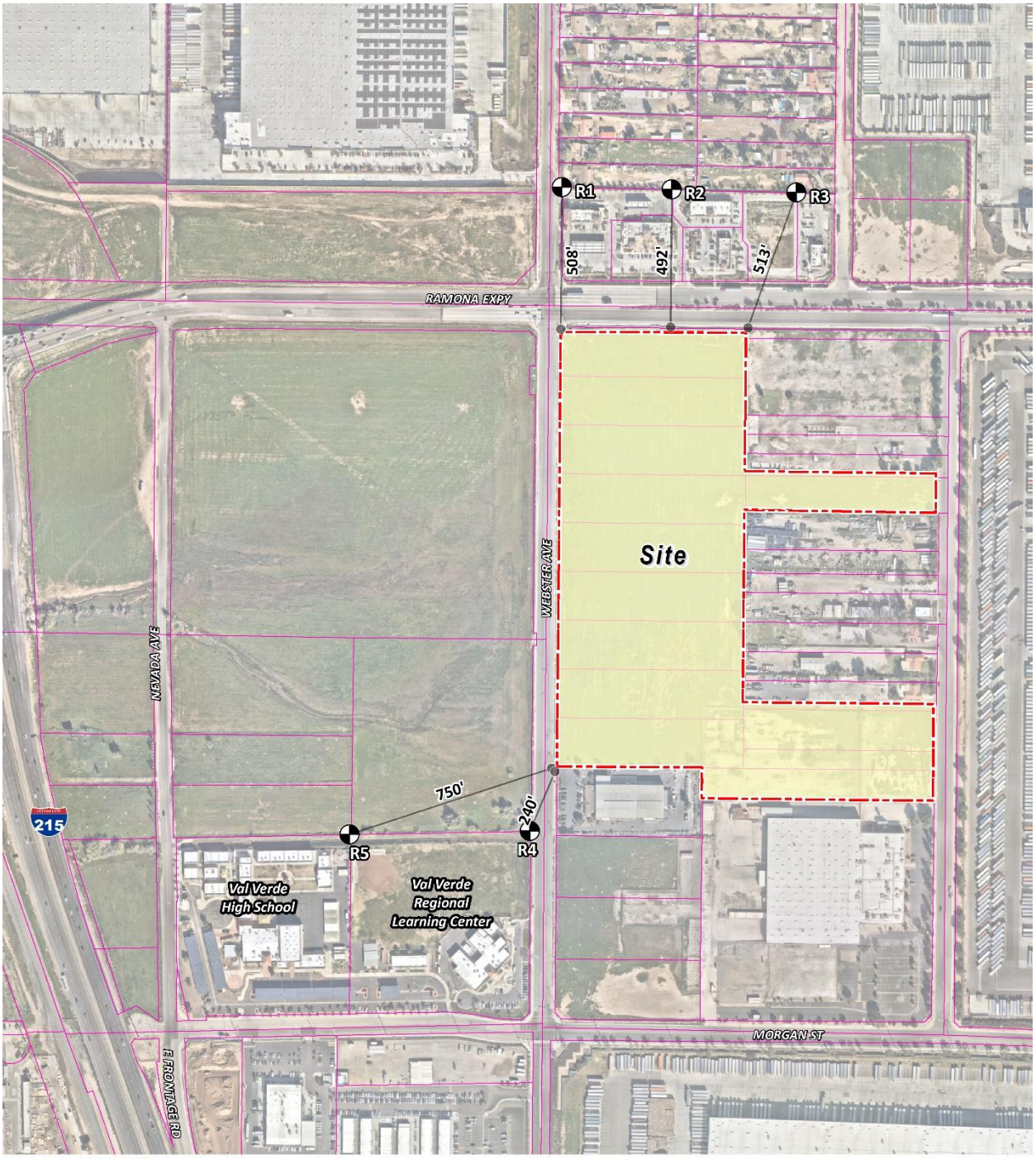
R2: Location R2 represents the property line of the existing residence at 4063 N Webster, approximately 492 feet north of the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

R3: Location R3 represents the property line of the existing residence at 4062 Brennan Avenue, approximately 513 feet north of the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.

R4: Location R4 represents the property line of the Val Verde Regional Learning Center athletic field at 3710 Webster Avenue, approximately 240 feet southwest of the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.

R5: Location R5 represents the property line of the existing noise sensitive Val Verde High School at 972 Morgan Street, approximately 750 feet southwest of the Project site. A 24-hour noise measurement was taken near this location, L5, 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 Perris DC 11 Project. Exhibit 9-A identifies the representative noise source locations used to assess the operational noise levels. Exhibit 9-A of the Noise Study includes 51 individual noise sources to conservatively describe the potential worst-case noise environment.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. 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, trash enclosure activity parking lot vehicle movements and diesel fire pump.

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, trash enclosure activity parking lot vehicle movements and diesel fire pump all operating continuously. These sources of noise activity will likely vary throughout the day.

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

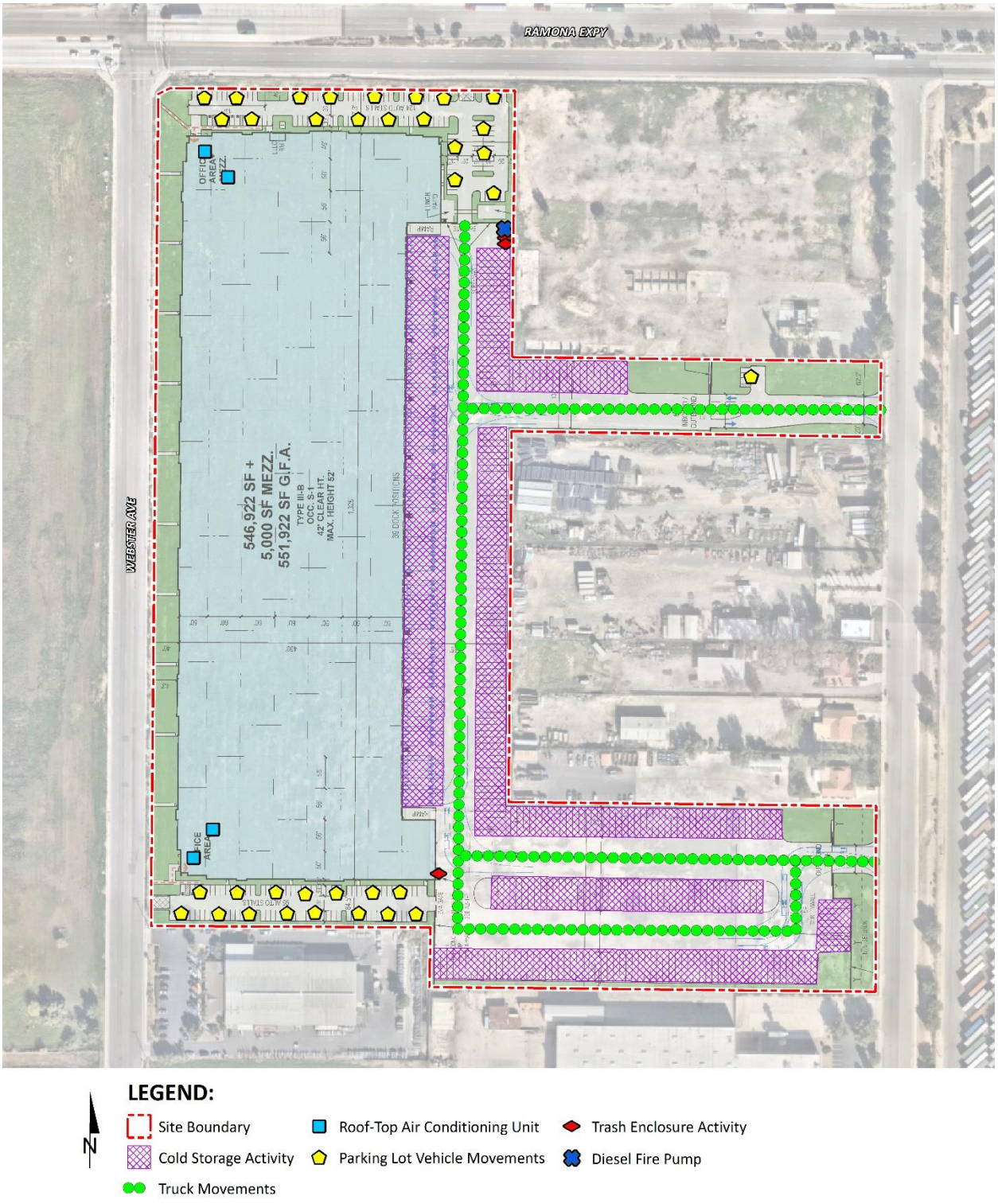


TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

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'	60	60	64.0	58.0	79.1	73.1
Roof-Top Air Conditioning Units	5'	39	28	77.2	57.2	77.7	57.7
Trash Enclosure Activity	5'	60	30	72.7	56.8	87.0	71.1
Parking Lot Vehicle Movements	5'	60	30	66.6	56.1	70.2	59.7
Diesel Fire Pump	5'	60	60	69.8	49.8	87.7	67.7

[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.

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 storage loading dock activities are intended to describe the typical outdoor operational noise activities associated with the Project. This includes truck idling, reefer activity (refrigerator truck/cold storage), deliveries, backup alarms, trailer docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background operation activities. Since the noise levels generated by cold storage loading dock activity can be slightly higher due to the use of refrigerated trucks or reefers, this reference noise level conservatively assumes that all loading dock activity is associated with cold storage facilities even though only 25 percent cold storage is anticipated. The reference noise level measurement was taken in the center of the loading dock activity area and represents multiple concurrent noise sources resulting in a combined noise level of 74.8 dBA L_{max} at a uniform distance of 50 feet. Specifically, the reference noise level measurement represents one truck located approximately 30 feet from the noise level meter with another truck passing by to park roughly 20 feet away, both with their engines idling. Throughout the reference noise level measurement, a separate docked and running reefer truck was located approximately 50 feet east of the measurement location. Additional background noise sources included truck pass-by noise, truck drivers talking to each other next to docked trucks, and air brake release noise when trucks parked.

9.2.3 TRUCK MOVEMENTS

The 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} and 58.0 dBA L_{eq} at 50 feet. The noise sources included at this measurement location account for the rattling and squeaking during normal opening and closing operations, the gate closure equipment, truck engines idling outside the entry gate, truck movements through the entry gate, and background truck court activities and forklift backup alarm noise.

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 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.

9.2.6 PARKING LOT VEHICLE MOVEMENTS

To describe the on-site parking lot activity a reference noise level of 59.7 dBA Lmax 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 to cars pulling in and out of parking spaces.

9.2.7 DIESEL FIRE PUMP

The site plan shows that the Project may include the use of a fire pump. To describe the diesel pump, a reference noise level measurement was taken by Urban Crossroads, Inc. at the Coachella Valley Water District (CVWD) pump site number 5676, located at 38-130 Portola Avenue in the City of Palm Desert. The reference noise level measurement indicates that pump activity generates noise levels of at the uniform 50-foot reference distance is 67.7 dBA L_{max} at 50 feet.

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 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, trash enclosure activity parking lot vehicle movements and diesel fire pump, 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 9-2 shows the Project operational noise levels during the daytime hours of 7:01 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 43.0 to 56.9 dBA L_{max}.

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA L_{max})				
	R1	R2	R3	R4	R5
Loading Dock Activity	42.6	54.3	56.7	52.9	54.6
Truck Movements	14.0	23.8	25.5	21.7	25.1
Roof-Top Air Conditioning Units	25.1	26.9	24.2	32.9	27.9
Trash Enclosure Activity	22.5	40.2	40.3	23.3	25.1
Parking Lot Vehicle Movements	30.4	38.7	38.3	47.0	40.7
Diesel Fire Pump	15.6	33.8	33.5	14.4	14.8
Total (All Noise Sources)	**43.0**	**54.6**	**56.9**	**53.9**	**54.8**

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

Table 9-3 shows the Project operational noise levels during the nighttime hours of 10:01 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 42.8 to 56.8 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 9-3: 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	42.6	54.3	56.7	52.9	54.6
Truck Movements	14.0	23.8	25.5	21.7	25.1
Roof-Top Air Conditioning Units	22.7	24.5	21.8	30.5	25.5
Trash Enclosure Activity	18.5	36.2	36.3	19.3	21.1
Parking Lot Vehicle Movements	26.5	34.7	34.3	43.1	36.7
Diesel Fire Pump	14.6	32.8	32.6	13.4	13.8
Total (All Noise Sources)	**42.8**	**54.5**	**56.8**	**53.4**	**54.7**

[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 9-4 shows the operational noise levels associated with Perris DC 11 Project will not exceed 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 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Project Operational Noise Levels (dBA L_{max})[2]		Exterior Noise Level Standards (dBA L_{max})[3]		Noise Level Standards Exceeded?[4]	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	43.0	42.8	80	60	No	No
R2	54.6	54.5	80	60	No	No
R3	56.9	56.8	80	60	No	No
R4	53.9	53.4	80	60	No	No
R5	54.8	54.7	80	60	No	No

[1] See Exhibit 8-A for the receiver locations.
[2] Project operational noise levels as shown on Tables 9-2 and 9-3.
[3] Exterior noise level standard as shown on Table 3-1.
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
"Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.

9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

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 10:01 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 9-5 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 9-5 indicates that the 24-hour noise levels associated with the Perris DC 11 at the nearest receiver locations are expected to range from 41.7 to 55.3 dBA CNEL.

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. The Project-related operational noise levels shown on Table 9-5 will not exceed 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.

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

Receiver Location[1]	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	35.5	35.0	41.7	60	No
R2	46.6	46.3	53.0	60	No
R3	48.7	48.6	55.3	60	No
R4	47.3	46.0	52.7	60	No
R5	47.0	46.7	53.4	60	No

[1] See Exhibit 8-A for the receiver locations.
[2] Project operational CNEL 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? "Daytime" = 7:01 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:00 a.m.

9.7 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 Table 9-6, the Project will generate a daytime operational noise level increase ranging from 0.0 to 0.1 dBA L_{eq} at the nearest receiver locations. Table 9-7 shows that the Project will generate a nighttime operational noise level increase ranging from 0.0 to 0.4 dBA L_{eq} at the nearest receiver locations. Appendix 9.2 includes the detailed noise dBA L_{eq} model inputs used to estimate the Project operational noise levels presented in this section.

The Project-related operational noise level increases will not exceed 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 9-6: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
R1	35.5	L1	68.9	68.9	0.0	3	No
R2	46.6	L2	63.8	63.9	0.1	3	No
R3	48.7	L3	64.1	64.2	0.1	3	No
R4	47.3	L4	62.8	62.9	0.1	3	No
R5	47.0	L5	69.3	69.3	0.0	3	No

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

TABLE 9-7: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
R1	35.0	L1	64.4	64.4	0.0	3	No
R2	46.3	L2	59.5	59.7	0.2	5	No
R3	48.6	L3	59.1	59.5	0.4	5	No
R4	46.0	L4	62.1	62.2	0.1	3	No
R5	46.7	L5	63.2	63.3	0.1	3	No

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

9.8 OPERATIONAL VIBRATION IMPACTS

The Project operational vibration impacts will include heavy trucks moving on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. According to the FTA *Transit Noise Impact and Vibration Assessment* trucks rarely create vibration that exceeds 70 VdB (0.0032 PPV in/sec) (unless there are bumps due to frequent potholes in the road). Since the trucks transiting on site will be travelling at very low speeds on smooth surfaces, it is expected that delivery truck vibration impacts at nearby receiver locations will be *less than significant*.

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10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearest sensitive receiver locations previously described in Section 8. To prevent high levels of construction noise from impacting noise-sensitive land uses, City of 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
- Paving
- Architectural Coating

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

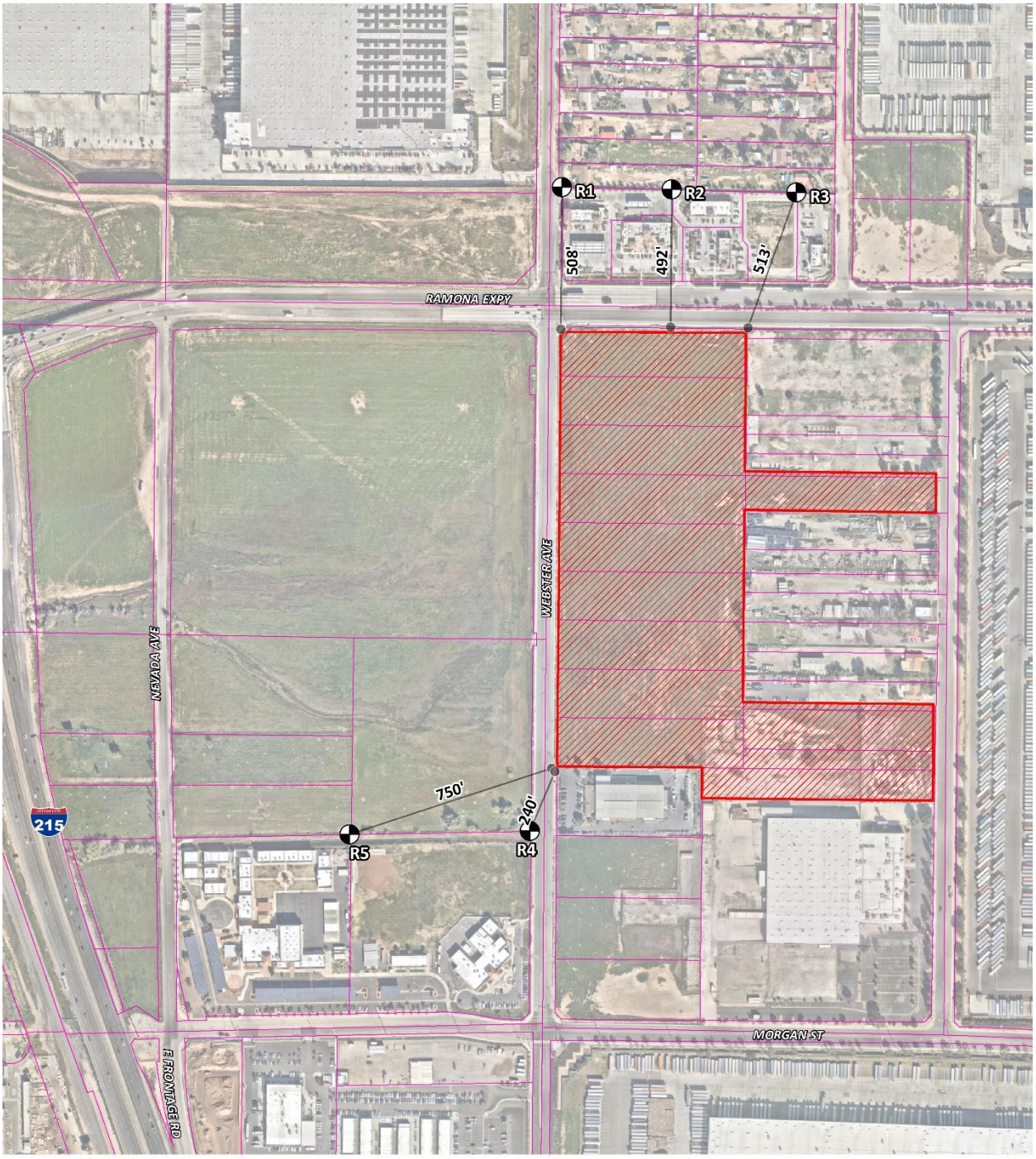

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

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	
Paving	Pavers	77	85
	Paving Equipment	85	
	Rollers	80	
Arch. Coating	Air Compressors	78	78

[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 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 levels are 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 highest construction noise levels are expected to range from 61.4 to 74.1 dBA L_{max} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Highest Construction Noise Levels (dBA L_{max})					
	Site Preparation	Grading	Building Construction	Paving	Arch. Coating	Highest Levels[2]
R1	58.4	61.4	61.4	61.4	54.4	61.4
R2	61.9	64.9	64.9	64.9	57.9	64.9
R3	63.1	66.1	66.1	66.1	59.1	66.1
R4	71.1	74.1	74.1	74.1	67.1	74.1
R5	67.5	70.5	70.5	70.5	63.5	70.5

[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 will not exceed the 80 dBA L_{max} construction noise level standard. Therefore, the noise impacts due to Project construction activities is considered *less than significant*.

TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{max})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	61.4	80	No
R2	64.9	80	No
R3	66.1	80	No
R4	74.1	80	No
R5	70.5	80	No

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

10.5 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. 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 10-4 shows the concrete pour activities noise levels will range from 57.4 to 71.5 dBA L_{max} at the nearby receiver locations. With prior authorization from the City of Perris, the nighttime concrete pour activities will satisfy the 80 dBA L_{max} construction noise level standard. Therefore, the nighttime concrete pour noise levels are considered *less than significant* at the nearby noise-sensitive receiver locations.

TABLE 10-4: 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	57.4	80	No
R2	59.1	80	No
R3	62.7	80	No
R4	71.5	80	No
R5	67.7	80	No

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Concrete pour noise level calculations based on distance from the pouring activity area to nearby receiver locations. CadnaA concrete pouring noise model calculations are included in Appendix 10.2.
[3] Construction noise level thresholds as shown on Table 4-1.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.6 CONSTRUCTION VIBRATION ANALYSIS

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

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Using the vibration source level of construction equipment provided on Table 10-5 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration building damage impacts. Table 10-6 presents the expected Project related vibration levels at the nearby building structure locations. At distances ranging from 240 to 750 feet from the Project construction boundary to the receiver building locations, construction vibration velocity levels are estimated to be between 0.001 and 0.007 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 10-6: 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	Vibratory Roller	Highest Vibration Level		
R1	508'	0.000	0.000	0.001	0.001	0.002	0.002	0.5	No
R2	492'	0.000	0.000	0.001	0.001	0.002	0.002	0.5	No
R3	513'	0.000	0.000	0.001	0.001	0.002	0.002	0.5	No
R4	240'	0.000	0.001	0.003	0.003	0.007	0.007	0.5	No
R5	750'	0.000	0.000	0.000	0.001	0.001	0.001	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 10-5).
[4] PVCC SP EIR, Page 4.9-27.
[5] Does the peak vibration exceed the acceptable vibration thresholds?
[6] Measured at the building structure to assess damage potential.
"PPV" = Peak Particle Velocity

11 REFERENCES

1. **State of California.** *California Environmental Quality Act, Appendix G.* 2019.
2. **City of Perris.** *Perris Valley Commerce Center Specific Plan Environmental Impact Report.* July 2011.
3. **Office of Planning and Research.** *State of California General Plan Guidelines.* 2019.
4. **State of California.** *2022 California Green Building Standards Code.*
5. **City of Perris.** *General Plan Noise Element.* August 2005.
6. —. *Municipal Code, Chapter 7.34 Noise Control.*
7. **County of Riverside.** *Airport Land Use Compatibility Plan.* October 2004.
8. **Air Force Reserve Command.** *Final Air Installations Compatible Use Zones Study March Air Reserve Base Riverside, California.* 2018.
9. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.
10. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*
11. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
12. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
13. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.
14. **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.
15. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
16. **EPD Solutions, Inc.** *Webster and Ramona Traffic Impact Analysis Report.* July 2023.
17. **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 Perris DC 11 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:15496

15496_L1_A 1.North
33, 50' 44.280000"117, 14' 37.070000"

15496_L1_A 2.South
33, 50' 44.260000"117, 14' 37.070000"

15496_L1_A 3.East
33, 50' 44.230000"117, 14' 37.040000"

15496_L1_A 4.West
33, 50' 44.260000"117, 14' 37.070000"

JN:15496

15496_L2_B 1.North
33, 50' 44.050000"117, 14' 32.950000"

15496_L2_B 2.South
33, 50' 44.000000"117, 14' 32.920000"

15496_L2_B 3.East
33, 50' 43.980000"117, 14' 32.920000"

15496_L2_B 4.West
33, 50' 44.010000"117, 14' 32.950000"

15496_L3_C 1.North
33, 50' 44.060000"117, 14' 27.840000"

15496_L3_C 2.South
33, 50' 44.010000"117, 14' 27.920000"

15496_L3_C 3.East
33, 50' 43.860000"117, 14' 28.060000"

15496_L3_C 4.West
33, 50' 43.790000"117, 14' 28.080000"

JN:15496

15496_L4_D 1.North
33, 50' 22.780000"117, 14' 38.360000"

15496_L4_D 2.South
33, 50' 22.750000"117, 14' 38.360000"

15496_L4_D 3.East
33, 50' 22.720000"117, 14' 38.300000"

15496_L4_D 4.West
33, 50' 22.740000"117, 14' 38.330000"

JN:15496

15496_L5_F 1.North
33, 50' 22.610000"117, 14' 53.300000"

15496_L5_F 2.South
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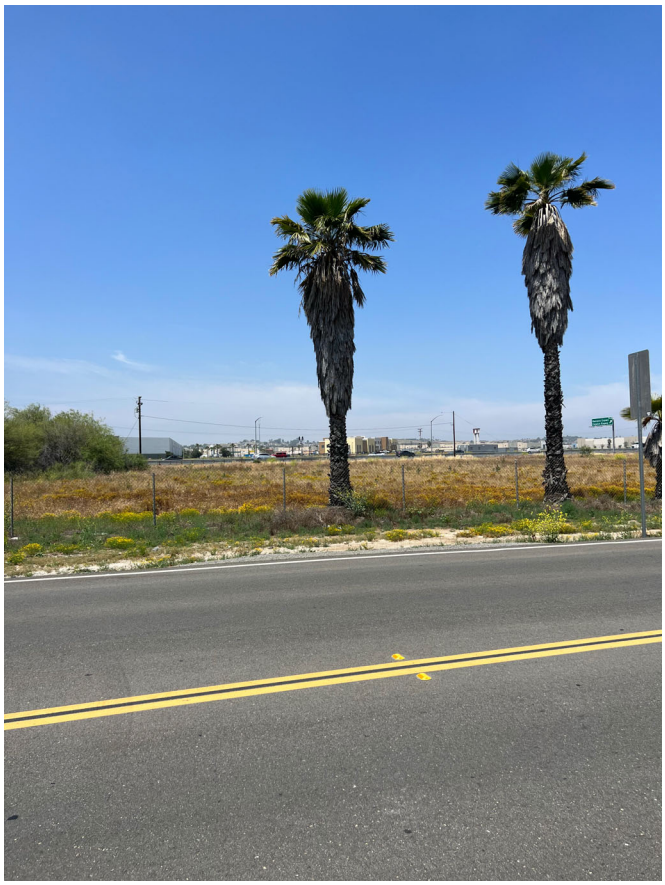
15496_L5_F 3.East
33, 50' 22.630000"117, 14' 53.160000"



15496_L5_F 4.West
33, 50' 22.630000"117, 14' 53.190000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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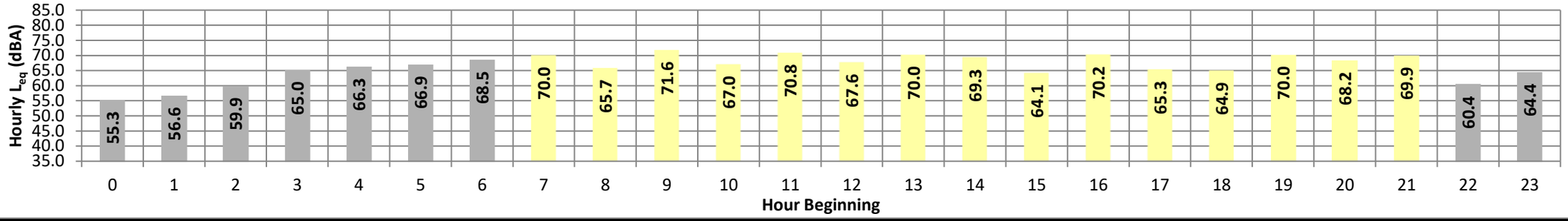
24-Hour Noise Level Measurement Summary

Date: Wednesday, May 17, 2023 *Location:* L1 - Located north of the site near the residence at 4063 *Meter:* Piccolo II *JN:* 15496

Project: Ramona & Webster *Source:* Webster Ave. *Analyst:* Z. Ibrahim

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	55.3	65.8	48.8	65.1	64.2	61.4	58.6	54.4	52.3	49.8	49.3	48.9	55.3	10.0	65.3
	1	56.6	65.6	48.6	65.3	64.8	62.6	61.0	56.5	53.3	49.8	49.2	48.7	56.6	10.0	66.6
	2	59.9	70.5	49.5	69.8	68.9	67.0	65.5	57.7	53.7	50.5	50.0	49.6	59.9	10.0	69.9
	3	65.0	74.7	53.0	74.3	73.6	71.4	69.2	64.8	62.7	55.2	54.0	53.2	65.0	10.0	75.0
	4	66.3	73.6	58.3	73.2	72.7	71.2	70.2	67.5	64.3	59.5	59.1	58.5	66.3	10.0	76.3
	5	66.9	77.2	58.8	76.3	75.2	72.6	71.1	66.8	63.6	59.6	59.2	58.9	66.9	10.0	76.9
	6	68.5	79.2	58.7	78.6	77.7	75.0	72.9	68.3	64.3	59.6	59.2	58.8	68.5	10.0	78.5
Day	7	70.0	78.3	61.5	77.7	77.1	75.1	73.9	70.6	67.6	64.1	63.0	62.0	70.0	0.0	70.0
	8	65.7	73.1	58.5	72.7	72.2	70.8	69.8	66.8	63.7	60.1	59.8	58.8	65.7	0.0	65.7
	9	71.6	85.7	56.9	84.9	83.6	78.9	72.1	67.5	65.1	60.2	59.3	57.3	71.6	0.0	71.6
	10	67.0	77.3	53.8	76.7	76.1	73.7	71.5	66.4	63.0	56.7	55.4	54.1	67.0	0.0	67.0
	11	70.8	79.6	59.9	79.0	78.4	77.1	75.7	71.6	67.4	62.0	60.8	60.1	70.8	0.0	70.8
	12	67.6	77.4	58.7	76.9	76.1	73.6	71.8	67.5	64.3	60.7	60.3	59.1	67.6	0.0	67.6
	13	70.0	78.7	60.1	78.3	77.7	75.5	74.0	70.5	67.8	62.2	61.3	60.3	70.0	0.0	70.0
	14	69.3	80.7	60.7	80.1	79.3	76.1	73.6	67.7	64.2	61.7	61.3	60.7	69.3	0.0	69.3
	15	64.1	74.2	54.2	73.8	73.2	70.8	68.6	63.7	60.0	55.4	54.9	54.4	64.1	0.0	64.1
	16	70.2	82.4	55.2	81.9	81.2	78.3	74.8	66.6	62.9	56.8	56.0	55.4	70.2	0.0	70.2
	17	65.3	76.0	55.1	75.2	74.0	70.9	69.0	65.0	62.2	57.2	56.0	55.3	65.3	0.0	65.3
	18	64.9	74.6	56.9	74.3	73.5	70.7	68.8	64.9	61.8	58.3	57.7	57.0	64.9	0.0	64.9
	19	70.0	78.6	62.9	78.2	77.5	75.4	73.2	69.9	68.4	64.7	63.9	63.1	70.0	5.0	75.0
	20	68.2	80.5	55.6	79.7	78.4	73.9	71.0	67.6	65.5	56.9	56.3	55.7	68.2	5.0	73.2
	21	69.9	82.2	59.1	81.4	80.8	77.0	74.0	67.6	63.7	59.9	59.6	59.3	69.9	5.0	74.9
Night	22	60.4	71.0	51.6	70.6	70.0	67.3	65.2	59.1	55.6	52.6	52.1	51.7	60.4	10.0	70.4
	23	64.4	74.0	59.3	73.2	72.1	69.1	67.4	65.1	62.1	59.8	59.6	59.4	64.4	10.0	74.4

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	64.1	73.1	53.8	72.7	72.2	70.7	68.6	63.7	60.0	55.4	54.9	54.1
	Max	71.6	85.7	62.9	84.9	83.6	78.9	75.7	71.6	68.4	64.7	63.9	63.1
Energy Average		68.9	Average:		78.1	77.3	74.5	72.1	67.6	64.5	59.8	59.0	58.2
Night	Min	55.3	65.6	48.6	65.1	64.2	61.4	58.6	54.4	52.3	49.8	49.2	48.7
	Max	68.5	79.2	59.3	78.6	77.7	75.0	72.9	68.3	64.3	59.8	59.6	59.4
Energy Average		64.4	Average:		71.8	71.0	68.6	66.8	62.3	59.1	55.2	54.6	54.2

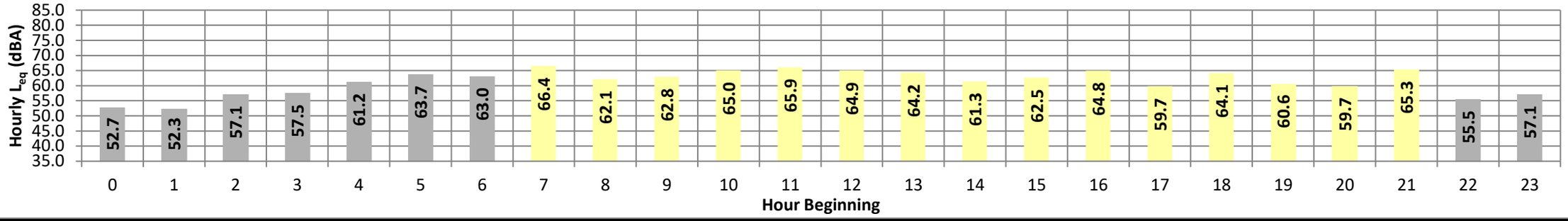
24-Hour CNEL	Leq (dBA) Daytime (7am-10pm)	Leq (dBA) Nighttime (10pm-7am)
72.5	**68.9**	**64.4**

24-Hour Noise Level Measurement Summary

Date: Wednesday, May 17, 2023 *Location:* L2 - Located north of the site near the commercial building at *Meter:* Piccolo II *JN:* 15496

Project: Ramona & Webster *Source:* 764 Ramona Expy. *Analyst:* Z. Ibrahim

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	52.7	59.7	48.7	59.3	58.6	56.9	55.7	53.2	51.4	49.5	49.2	48.8	52.7	10.0	62.7
	1	52.3	60.6	46.9	60.0	59.3	57.6	56.5	52.2	50.1	47.7	47.4	47.0	52.3	10.0	62.3
	2	57.1	68.0	47.4	67.3	65.9	63.7	62.5	56.0	52.2	48.2	47.8	47.4	57.1	10.0	67.1
	3	57.5	65.0	53.1	64.5	63.8	62.0	61.0	58.0	55.7	53.8	53.4	53.1	57.5	10.0	67.5
	4	61.2	68.7	57.0	67.8	66.5	64.7	64.1	62.2	59.9	57.6	57.3	57.1	61.2	10.0	71.2
	5	63.7	75.2	57.7	74.6	73.2	69.3	66.7	62.6	60.7	58.4	58.1	57.8	63.7	10.0	73.7
	6	63.0	71.5	56.3	70.8	70.0	68.5	67.4	63.2	60.7	57.3	56.9	56.5	63.0	10.0	73.0
Day	7	66.4	76.4	59.5	75.4	74.3	71.6	70.4	66.4	63.9	60.8	60.3	59.7	66.4	0.0	66.4
	8	62.1	74.7	53.3	73.8	72.2	67.0	65.1	60.9	57.9	54.5	54.1	53.5	62.1	0.0	62.1
	9	62.8	73.4	54.5	72.3	70.9	68.6	67.4	62.9	59.0	55.3	54.9	54.6	62.8	0.0	62.8
	10	65.0	79.0	51.3	77.8	75.9	71.6	68.3	62.2	57.2	52.4	51.9	51.5	65.0	0.0	65.0
	11	65.9	76.7	56.8	75.9	75.0	72.9	71.0	64.7	61.2	57.8	57.3	57.0	65.9	0.0	65.9
	12	64.9	76.6	53.9	75.9	74.7	71.3	69.4	63.9	59.8	55.0	54.4	54.0	64.9	0.0	64.9
	13	64.2	75.0	56.9	74.3	73.1	69.5	68.1	64.2	60.6	57.8	57.5	57.0	64.2	0.0	64.2
	14	61.3	70.4	54.8	69.6	69.0	67.7	66.1	61.3	58.1	55.5	55.2	54.9	61.3	0.0	61.3
	15	62.5	73.2	56.5	72.6	71.8	69.2	67.0	60.6	58.7	57.1	56.9	56.6	62.5	0.0	62.5
	16	64.8	72.6	59.3	71.8	71.1	69.7	68.5	65.3	63.0	60.2	59.7	59.5	64.8	0.0	64.8
	17	59.7	68.1	53.8	67.6	67.0	65.3	63.6	59.9	57.3	54.7	54.3	54.0	59.7	0.0	59.7
	18	64.1	79.0	54.3	77.5	75.2	70.7	67.2	59.4	57.0	55.0	54.8	54.4	64.1	0.0	64.1
	19	60.6	69.6	55.0	68.8	68.1	65.7	64.5	60.8	58.1	55.9	55.5	55.1	60.6	5.0	65.6
	20	59.7	71.5	53.6	70.2	68.4	64.4	62.5	59.3	57.2	54.4	54.1	53.7	59.7	5.0	64.7
	21	65.3	80.1	50.7	79.3	78.1	71.9	66.2	58.6	54.9	51.8	51.3	50.9	65.3	5.0	70.3
Night	22	55.5	66.0	49.9	64.9	63.6	60.6	58.8	55.1	53.1	50.9	50.5	50.1	55.5	10.0	65.5
	23	57.1	65.3	49.1	65.0	64.4	63.2	62.0	57.6	53.6	50.1	49.6	49.2	57.1	10.0	67.1

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	59.7	68.1	50.7	67.6	67.0	64.4	62.5	58.6	54.9	51.8	51.3	50.9
	Max	66.4	80.1	59.5	79.3	78.1	72.9	71.0	66.4	63.9	60.8	60.3	59.7
Energy Average		63.8	Average:		73.5	72.3	69.2	67.0	62.0	58.9	55.9	55.5	55.1
Night	Min	52.3	59.7	46.9	59.3	58.6	56.9	55.7	52.2	50.1	47.7	47.4	47.0
	Max	63.7	75.2	57.7	74.6	73.2	69.3	67.4	63.2	60.7	58.4	58.1	57.8
Energy Average		59.5	Average:		66.0	65.0	62.9	61.6	57.8	55.3	52.6	52.3	51.9

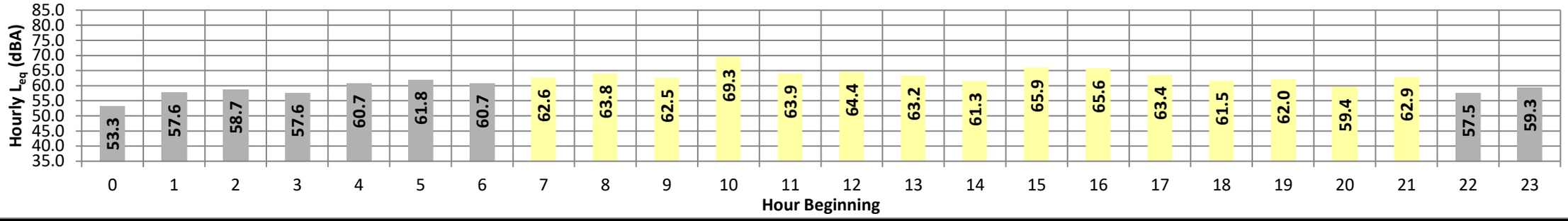
24-Hour CNEL	Leq (dBA) Daytime (7am-10pm)	Leq (dBA) Nighttime (10pm-7am)
67.3	63.8	59.5

24-Hour Noise Level Measurement Summary

Date: Wednesday, May 17, 2023 *Location:* L3 - Located north of the site near the retail building at 736 *Meter:* Piccolo II *JN:* 15496

Project: Ramona & Webster *Source:* Ramona Expy. *Analyst:* Z. Ibrahim

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	53.3	59.3	48.6	59.1	58.7	57.7	57.0	54.0	51.8	49.5	49.1	48.7	53.3	10.0	63.3
	1	57.6	67.9	48.4	66.8	65.7	62.7	61.4	58.0	55.3	49.6	49.0	48.5	57.6	10.0	67.6
	2	58.7	69.2	50.4	68.4	67.6	65.4	63.5	57.8	54.5	51.6	51.0	50.5	58.7	10.0	68.7
	3	57.6	63.2	52.3	62.9	62.6	61.6	61.0	58.7	56.4	53.2	52.8	52.4	57.6	10.0	67.6
	4	60.7	65.6	56.4	65.4	65.1	64.3	63.8	61.9	59.5	57.1	56.8	56.5	60.7	10.0	70.7
	5	61.8	67.5	58.1	67.2	66.8	65.3	64.4	62.5	60.8	58.8	58.6	58.2	61.8	10.0	71.8
	6	60.7	68.6	56.7	67.7	66.7	65.0	63.5	61.0	59.3	57.4	57.2	56.8	60.7	10.0	70.7
Day	7	62.6	72.0	54.6	71.6	71.0	67.7	66.4	62.7	59.9	56.1	55.4	54.8	62.6	0.0	62.6
	8	63.8	71.0	57.8	70.3	69.8	68.4	67.4	64.3	62.4	59.6	58.8	58.0	63.8	0.0	63.8
	9	62.5	74.9	53.8	73.7	72.3	67.9	66.1	61.4	58.0	55.1	54.6	54.1	62.5	0.0	62.5
	10	69.3	76.5	62.3	76.1	75.6	74.8	74.3	69.4	67.3	64.1	63.3	62.5	69.3	0.0	69.3
	11	63.9	71.0	57.3	70.5	70.0	68.6	67.7	64.7	62.4	58.4	57.9	57.5	63.9	0.0	63.9
	12	64.4	78.0	53.3	77.2	75.9	70.8	66.7	61.2	57.7	54.3	53.9	53.5	64.4	0.0	64.4
	13	63.2	76.3	55.0	74.9	73.0	69.3	67.4	61.3	57.9	55.8	55.4	55.1	63.2	0.0	63.2
	14	61.3	70.5	55.7	69.8	69.0	66.7	65.1	61.0	58.8	56.9	56.4	55.9	61.3	0.0	61.3
	15	65.9	78.6	59.9	77.5	75.8	72.4	69.0	63.3	61.9	60.6	60.4	60.0	65.9	0.0	65.9
	16	65.6	73.4	63.1	72.1	70.7	68.4	67.8	65.7	64.8	63.7	63.5	63.2	65.6	0.0	65.6
	17	63.4	70.4	58.3	69.7	68.9	67.6	66.8	64.1	62.0	59.4	59.0	58.5	63.4	0.0	63.4
	18	61.5	68.5	56.1	67.9	67.3	66.2	65.0	62.4	59.9	57.2	56.8	56.2	61.5	0.0	61.5
	19	62.0	72.0	55.4	71.3	70.2	67.5	66.2	61.8	59.0	56.4	56.0	55.5	62.0	5.0	67.0
	20	59.4	66.7	53.4	66.4	66.0	64.9	63.9	60.1	56.9	54.2	53.9	53.5	59.4	5.0	64.4
	21	62.9	72.3	54.3	71.3	70.3	68.5	67.0	63.4	60.8	55.1	54.7	54.4	62.9	5.0	67.9
Night	22	57.5	64.6	53.8	64.2	63.8	62.4	60.9	57.7	55.9	54.4	54.2	53.9	57.5	10.0	67.5
	23	59.3	65.7	54.1	65.4	65.0	64.1	63.3	60.7	56.8	54.6	54.4	54.2	59.3	10.0	69.3

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	59.4	66.7	53.3	66.4	66.0	64.9	63.9	60.1	56.9	54.2	53.9	53.5
	Max	69.3	78.6	63.1	77.5	75.9	74.8	74.3	69.4	67.3	64.1	63.5	63.2
Energy Average		64.1	Average:		72.0	71.1	68.6	67.1	63.1	60.6	57.8	57.3	56.8
Night	Min	53.3	59.3	48.4	59.1	58.7	57.7	57.0	54.0	51.8	49.5	49.0	48.5
	Max	61.8	69.2	58.1	68.4	67.6	65.4	64.4	62.5	60.8	58.8	58.6	58.2
Energy Average		59.1	Average:		65.2	64.7	63.2	62.1	59.1	56.7	54.0	53.7	53.3

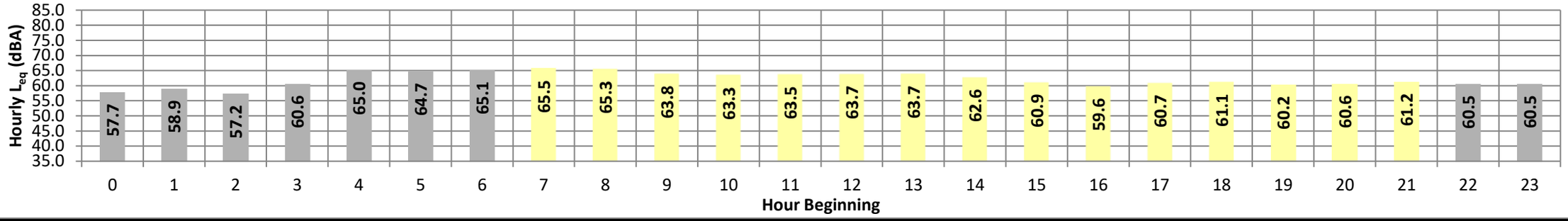
24-Hour CNEL	*Leq (dBA) Daytime (7am-10pm)*	*Leq (dBA) Nighttime (10pm-7am)*
67.1	**64.1**	**59.1**

24-Hour Noise Level Measurement Summary

Date: Wednesday, May 17, 2023 *Location:* L3 - Located southwest of the site near the educational facility *Meter:* Piccolo II *JN:* 15496

Project: Ramona & Webster *Source:* at 3710 Webster Ave. *Analyst:* Z. Ibrahim

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	57.7	68.7	49.1	68.4	67.8	65.6	62.9	54.7	51.5	49.7	49.4	49.2	57.7	10.0	67.7
	1	58.9	69.3	50.2	69.1	68.7	66.7	64.5	56.5	52.7	51.0	50.7	50.4	58.9	10.0	68.9
	2	57.2	67.8	49.8	67.5	67.0	64.9	62.5	54.8	52.1	50.5	50.2	49.9	57.2	10.0	67.2
	3	60.6	70.6	54.5	70.1	69.3	67.1	65.1	59.2	56.8	55.2	54.9	54.6	60.6	10.0	70.6
	4	65.0	72.8	58.5	72.6	72.1	70.6	69.6	65.6	62.0	59.1	58.9	58.6	65.0	10.0	75.0
	5	64.7	73.6	59.2	73.2	72.6	70.5	68.9	64.6	61.4	59.6	59.5	59.3	64.7	10.0	74.7
	6	65.1	73.5	56.2	73.3	72.8	71.3	70.2	65.7	61.3	57.0	56.6	56.3	65.1	10.0	75.1
Day	7	65.5	73.8	51.8	73.5	73.0	71.5	70.5	66.7	62.1	53.8	52.7	52.0	65.5	0.0	65.5
	8	65.3	75.6	49.9	75.3	74.7	72.2	70.2	65.2	59.8	51.8	51.1	50.2	65.3	0.0	65.3
	9	63.8	73.4	47.8	73.0	72.5	70.6	69.1	64.2	57.9	49.2	48.6	47.9	63.8	0.0	63.8
	10	63.3	72.9	47.4	72.6	72.1	70.5	69.1	63.5	56.9	48.7	48.1	47.5	63.3	0.0	63.3
	11	63.5	72.6	51.5	72.4	72.0	70.3	68.9	63.8	58.7	52.6	52.0	51.6	63.5	0.0	63.5
	12	63.7	72.8	52.7	72.4	71.9	70.1	68.8	64.1	59.2	53.7	53.3	52.8	63.7	0.0	63.7
	13	63.7	73.4	52.9	73.0	72.4	70.1	68.5	64.1	59.4	54.0	53.5	53.0	63.7	0.0	63.7
	14	62.6	71.3	52.6	70.9	70.4	68.9	67.7	63.2	58.5	53.7	53.2	52.8	62.6	0.0	62.6
	15	60.9	71.1	53.0	70.6	69.8	67.2	65.3	60.5	56.7	53.9	53.5	53.1	60.9	0.0	60.9
	16	59.6	68.5	51.3	68.2	67.7	65.9	64.6	59.7	55.3	52.1	51.8	51.4	59.6	0.0	59.6
	17	60.7	69.3	53.7	69.0	68.5	66.7	65.3	61.0	57.2	54.5	54.2	53.9	60.7	0.0	60.7
	18	61.1	69.8	54.7	69.5	69.0	67.0	65.7	61.2	57.5	55.3	55.1	54.8	61.1	0.0	61.1
	19	60.2	68.9	54.7	68.6	68.2	66.2	64.7	59.8	56.9	55.4	55.1	54.9	60.2	5.0	65.2
	20	60.6	70.4	53.5	70.1	69.6	67.3	65.3	59.6	56.5	54.2	53.9	53.6	60.6	5.0	65.6
	21	61.2	70.6	52.9	70.4	69.9	68.0	66.3	60.8	56.8	53.7	53.3	53.0	61.2	5.0	66.2
Night	22	60.5	69.9	51.4	69.6	69.2	67.5	65.9	59.8	55.4	52.2	51.9	51.6	60.5	10.0	70.5
	23	60.5	69.5	48.9	69.3	68.9	67.2	65.7	60.8	56.0	49.9	49.4	49.0	60.5	10.0	70.5

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	59.6	68.5	47.4	68.2	67.7	65.9	64.6	59.6	55.3	48.7	48.1	47.5
	Max	65.5	75.6	54.7	75.3	74.7	72.2	70.5	66.7	62.1	55.4	55.1	54.9
Energy Average		62.8	Average:		71.3	70.8	68.8	67.3	62.5	58.0	53.1	52.6	52.2
Night	Min	57.2	67.8	48.9	67.5	67.0	64.9	62.5	54.7	51.5	49.7	49.4	49.0
	Max	65.1	73.6	59.2	73.3	72.8	71.3	70.2	65.7	62.0	59.6	59.5	59.3
Energy Average		62.1	Average:		70.3	69.8	67.9	66.1	60.2	56.6	53.8	53.5	53.2

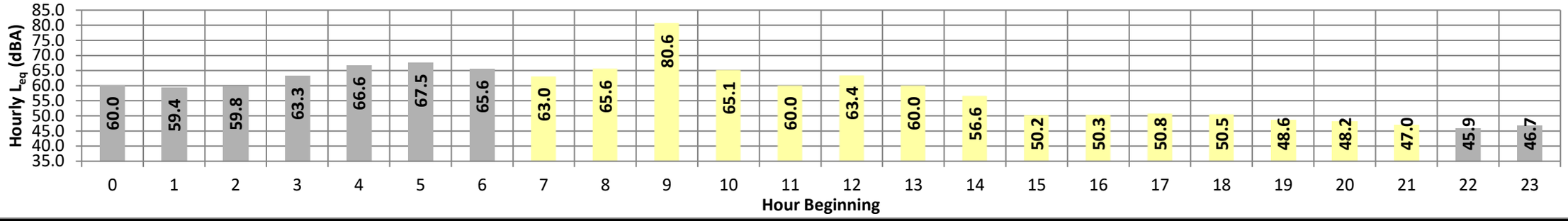
24-Hour CNEL	Leq (dBA) Daytime (7am-10pm)	Leq (dBA) Nighttime (10pm-7am)
68.8	62.8	62.1

24-Hour Noise Level Measurement Summary

Date: Wednesday, May 17, 2023 *Location:* L5 - Located southwest of the site near the Val Verde High *Meter:* Piccolo II *JN:* 15496

Project: Ramona & Webster *Source:* School at 972 Morgan St. *Analyst:* Z. Ibrahim

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	60.0	65.7	55.4	65.3	64.8	63.3	62.4	60.7	59.3	56.6	56.0	55.5	60.0	10.0	70.0
	1	59.4	65.2	54.4	64.9	64.5	63.2	62.2	60.1	58.6	55.6	55.1	54.6	59.4	10.0	69.4
	2	59.8	64.5	55.1	64.2	63.8	62.7	62.2	60.7	59.3	56.5	55.9	55.3	59.8	10.0	69.8
	3	63.3	67.2	60.1	67.0	66.7	65.7	65.1	64.0	62.9	61.0	60.5	60.2	63.3	10.0	73.3
	4	66.6	71.8	63.8	71.5	70.9	69.5	68.9	66.9	65.9	64.5	64.2	63.9	66.6	10.0	76.6
	5	67.5	76.3	64.5	75.9	74.8	71.8	69.7	66.9	66.1	65.1	64.8	64.6	67.5	10.0	77.5
	6	65.6	74.9	60.7	74.4	73.4	70.9	69.3	65.2	63.0	61.3	61.0	60.8	65.6	10.0	75.6
Day	7	63.0	74.4	55.2	73.8	72.7	69.2	67.0	61.8	58.2	56.0	55.6	55.3	63.0	0.0	63.0
	8	65.6	77.2	57.7	76.5	75.3	71.5	69.1	64.1	61.9	59.4	58.7	57.9	65.6	0.0	65.6
	9	80.6	90.3	72.0	88.9	87.5	84.9	84.0	81.1	78.9	74.8	73.7	72.3	80.6	0.0	80.6
	10	65.1	80.4	48.0	78.5	76.8	72.1	67.8	59.0	55.2	50.4	49.6	48.5	65.1	0.0	65.1
	11	60.0	75.3	48.9	73.2	71.0	66.0	63.0	55.2	53.1	50.3	49.8	49.3	60.0	0.0	60.0
	12	63.4	77.7	48.3	75.9	74.4	71.0	68.9	57.1	53.5	49.9	49.3	48.6	63.4	0.0	63.4
	13	60.0	75.6	50.4	71.7	69.5	65.7	62.8	58.0	55.6	52.3	51.8	50.8	60.0	0.0	60.0
	14	56.6	61.6	52.7	61.0	60.4	59.6	59.0	57.4	55.9	53.8	53.4	53.0	56.6	0.0	56.6
	15	50.2	54.7	47.1	54.2	53.9	53.1	52.6	50.9	49.6	48.1	47.8	47.4	50.2	0.0	50.2
	16	50.3	55.2	47.3	54.8	54.4	53.4	52.7	50.8	49.6	48.2	47.9	47.5	50.3	0.0	50.3
	17	50.8	56.3	47.5	55.8	55.4	54.1	53.4	51.2	50.1	48.5	48.2	47.8	50.8	0.0	50.8
	18	50.5	54.9	47.5	54.4	54.1	53.2	52.8	51.0	49.9	48.5	48.2	47.8	50.5	0.0	50.5
	19	48.6	53.9	45.1	53.4	52.9	51.8	51.0	49.2	47.9	46.2	45.8	45.4	48.6	5.0	53.6
	20	48.2	54.2	43.2	53.8	53.4	52.4	51.5	48.9	47.0	44.6	44.1	43.5	48.2	5.0	53.2
	21	47.0	53.1	42.1	52.7	52.3	51.3	50.4	47.6	45.7	43.3	42.9	42.3	47.0	5.0	52.0
Night	22	45.9	51.4	40.8	51.0	50.7	49.7	49.0	46.8	44.9	42.1	41.7	41.1	45.9	10.0	55.9
	23	46.7	52.9	40.4	52.5	52.0	50.9	50.4	47.8	45.2	41.9	41.3	40.7	46.7	10.0	56.7

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	47.0	53.1	42.1	52.7	52.3	51.3	50.4	47.6	45.7	43.3	42.9	42.3
	Max	80.6	90.3	72.0	88.9	87.5	84.9	84.0	81.1	78.9	74.8	73.7	72.3
Energy Average		69.3	Average:		65.2	64.3	62.0	60.4	56.2	54.2	51.6	51.1	50.5
Night	Min	45.9	51.4	40.4	51.0	50.7	49.7	49.0	46.8	44.9	41.9	41.3	40.7
	Max	67.5	76.3	64.5	75.9	74.8	71.8	69.7	66.9	66.1	65.1	64.8	64.6
Energy Average		63.2	Average:		65.2	64.6	63.1	62.1	59.9	58.4	56.1	55.6	55.2

24-Hour CNEL	Leq (dBA) Daytime (7am-10pm)	Leq (dBA) Nighttime (10pm-7am)
71.2	**69.3**	**63.2**

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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: Webster Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,260 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	226 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-8.33	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.92	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.34	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	54.5	52.3	47.3	55.6	56.1
Medium Trucks:	59.3	57.6	53.2	50.5	58.7	59.0
Heavy Trucks:	65.7	64.3	60.8	53.0	63.5	64.1
Vehicle Noise:	67.0	65.5	62.0	55.6	65.2	65.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	25	53	114	245

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

Scenario: E+P
Road Name: Webster Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,756 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	276 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:	77.4%	11.6%	11.0%	81.23%
Medium Trucks:	81.0%	7.3%	11.7%	8.76%
Heavy Trucks:	85.4%	9.7%	4.8%	10.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
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	-7.25	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.92	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.34	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.5	55.6	53.4	48.4	56.7	57.2
Medium Trucks:	59.3	57.6	53.2	50.5	58.7	59.0
Heavy Trucks:	65.7	64.3	60.8	53.0	63.5	64.1
Vehicle Noise:	67.1	65.6	62.2	55.8	65.4	65.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	231
CNEL:	25	54	116	250

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

Scenario: OYC
Road Name: Webster Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,400 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	240 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-8.07	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.66	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.08	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	54.8	52.6	47.6	55.9	56.4
Medium Trucks:	59.6	57.9	53.4	50.7	58.9	59.2
Heavy Trucks:	66.0	64.5	61.1	53.3	63.8	64.4
Vehicle Noise:	67.3	65.7	62.3	55.9	65.5	66.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	235
CNEL:	26	55	118	255

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

Scenario: OYC+P
Road Name: Webster Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,896 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	290 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:	77.4%	11.6%	11.0%	81.03%
Medium Trucks:	81.0%	7.3%	11.7%	8.85%
Heavy Trucks:	85.4%	9.7%	4.8%	10.12%

Noise Source 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	-7.04	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.66	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.08	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:	57.7	55.8	53.6	48.6	56.9	57.4
Medium Trucks:	59.6	57.9	53.4	50.7	58.9	59.2
Heavy Trucks:	66.0	64.5	61.1	53.3	63.8	64.4
Vehicle Noise:	67.4	65.8	62.4	56.1	65.6	66.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	111	240
CNEL:	26	56	121	260

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 and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,260 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	226 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-8.33	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.92	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.34	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	54.5	52.3	47.3	55.6	56.1
Medium Trucks:	59.3	57.6	53.2	50.5	58.7	59.0
Heavy Trucks:	65.7	64.3	60.8	53.0	63.5	64.1
Vehicle Noise:	67.0	65.5	62.0	55.6	65.2	65.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	25	53	114	245

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 and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,260 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	226 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-8.33	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.92	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.34	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	54.5	52.3	47.3	55.6	56.1
Medium Trucks:	59.3	57.6	53.2	50.5	58.7	59.0
Heavy Trucks:	65.7	64.3	60.8	53.0	63.5	64.1
Vehicle Noise:	67.0	65.5	62.0	55.6	65.2	65.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	25	53	114	245

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

Scenario: OYC
Road Name: Webster Av.
Road Segment: n/o Morgan St.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,400 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	240 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-8.07	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.66	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.08	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	54.8	52.6	47.6	55.9	56.4
Medium Trucks:	59.6	57.9	53.4	50.7	58.9	59.2
Heavy Trucks:	66.0	64.5	61.1	53.3	63.8	64.4
Vehicle Noise:	67.3	65.7	62.3	55.9	65.5	66.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	235
CNEL:	26	55	118	255

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

Scenario: OYC+P
Road Name: Webster Av.
Road Segment: n/o Morgan St.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,400 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	240 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-8.07	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	75.75	-16.66	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-16.08	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	54.8	52.6	47.6	55.9	56.4
Medium Trucks:	59.6	57.9	53.4	50.7	58.9	59.2
Heavy Trucks:	66.0	64.5	61.1	53.3	63.8	64.4
Vehicle Noise:	67.3	65.7	62.3	55.9	65.5	66.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	235
CNEL:	26	55	118	255

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

Scenario: E
Road Name: Brennan Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	10 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-21.87	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-30.46	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-29.88	2.69	-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:	43.9	42.0	39.7	34.7	43.0	43.6
Medium Trucks:	46.8	45.1	40.6	37.9	46.1	46.4
Heavy Trucks:	53.2	51.7	48.3	40.5	50.9	51.5
Vehicle Noise:	54.5	52.9	49.5	43.1	52.7	53.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	2	5	11	23
CNEL:	3	5	12	25

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

Scenario: E+P
Road Name: Brennan Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	10 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-21.87	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-30.46	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-29.88	2.69	-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:	43.9	42.0	39.7	34.7	43.0	43.6
Medium Trucks:	46.8	45.1	40.6	37.9	46.1	46.4
Heavy Trucks:	53.2	51.7	48.3	40.5	50.9	51.5
Vehicle Noise:	54.5	52.9	49.5	43.1	52.7	53.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	2	5	11	23
CNEL:	3	5	12	25

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

Scenario: OYC
Road Name: Brennan Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	140 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	14 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-20.41	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-29.00	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-28.42	2.69	-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:	45.3	43.4	41.2	36.2	44.5	45.0
Medium Trucks:	48.2	46.5	42.1	39.4	47.6	47.9
Heavy Trucks:	54.6	53.2	49.7	41.9	52.4	53.0
Vehicle Noise:	55.9	54.4	50.9	44.5	54.1	54.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	13	29
CNEL:	3	7	15	31

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

Scenario: OYC+P
Road Name: Brennan Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	140 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	14 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-20.41	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-29.00	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-28.42	2.69	-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:	45.3	43.4	41.2	36.2	44.5	45.0
Medium Trucks:	48.2	46.5	42.1	39.4	47.6	47.9
Heavy Trucks:	54.6	53.2	49.7	41.9	52.4	53.0
Vehicle Noise:	55.9	54.4	50.9	44.5	54.1	54.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	13	29
CNEL:	3	7	15	31

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

Scenario: E
Road Name: Brennan Av.
Road Segment: n/o Project Dwy. 4
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	60 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	6 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-24.09	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-32.68	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-32.10	2.69	-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:	41.6	39.7	37.5	32.5	40.8	41.3
Medium Trucks:	44.6	42.9	38.4	35.7	43.9	44.2
Heavy Trucks:	51.0	49.5	46.1	38.2	48.7	49.3
Vehicle Noise:	52.2	50.7	47.2	40.9	50.5	51.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	2	4	8	16
CNEL:	2	4	8	18

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

Scenario: E+P
Road Name: Brennan Av.
Road Segment: n/o Project Dwy. 4
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	180 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	18 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	25.67%
Medium Trucks:	81.0%	7.3%	11.7%	26.90%
Heavy Trucks:	85.4%	9.7%	4.8%	47.43%

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:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-24.09	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-23.89	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-21.43	2.69	-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:	41.6	39.7	37.5	32.5	40.8	41.3
Medium Trucks:	53.4	51.6	47.2	44.5	52.7	53.0
Heavy Trucks:	61.6	60.2	56.7	48.9	59.4	60.0
Vehicle Noise:	62.3	60.8	57.2	50.3	60.3	60.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	74
CNEL:	8	17	37	81

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

Scenario: OYC
Road Name: Brennan Av.
Road Segment: n/o Project Dwy. 4
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	10 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-21.87	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-30.46	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-29.88	2.69	-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:	43.9	42.0	39.7	34.7	43.0	43.6
Medium Trucks:	46.8	45.1	40.6	37.9	46.1	46.4
Heavy Trucks:	53.2	51.7	48.3	40.5	50.9	51.5
Vehicle Noise:	54.5	52.9	49.5	43.1	52.7	53.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	2	5	11	23
CNEL:	3	5	12	25

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

Scenario: OYC+P
Road Name: Brennan Av.
Road Segment: n/o Project Dwy. 4
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	220 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	22 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	35.01%
Medium Trucks:	81.0%	7.3%	11.7%	23.96%
Heavy Trucks:	85.4%	9.7%	4.8%	41.03%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-21.87	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-23.52	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-21.19	2.69	-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:	43.9	42.0	39.7	34.7	43.0	43.6
Medium Trucks:	53.7	52.0	47.6	44.9	53.0	53.4
Heavy Trucks:	61.9	60.4	57.0	49.2	59.6	60.2
Vehicle Noise:	62.5	61.0	57.5	50.6	60.6	61.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	78
CNEL:	8	18	39	84

Monday, February 12, 2024

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

Scenario: E
Road Name: Brennan Av.
Road Segment: n/o Morgan St.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	410 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	41 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-15.75	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-24.33	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-23.75	2.69	-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:	50.0	48.1	45.9	40.9	49.2	49.7
Medium Trucks:	52.9	51.2	46.8	44.0	52.2	52.5
Heavy Trucks:	59.3	57.8	54.4	46.6	57.1	57.7
Vehicle Noise:	60.6	59.0	55.6	49.2	58.8	59.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	59
CNEL:	6	14	30	64

Monday, February 12, 2024

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

Scenario: E+P
Road Name: Brennan Av.
Road Segment: n/o Morgan St.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	567 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	57 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	55.74%
Medium Trucks:	81.0%	7.3%	11.7%	17.42%
Heavy Trucks:	85.4%	9.7%	4.8%	26.84%

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:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-15.75	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-20.80	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-18.92	2.69	-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:	50.0	48.1	45.9	40.9	49.2	49.7
Medium Trucks:	56.4	54.7	50.3	47.6	55.8	56.1
Heavy Trucks:	64.1	62.7	59.2	51.4	61.9	62.5
Vehicle Noise:	65.0	63.4	59.9	53.2	63.0	63.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	53	113
CNEL:	12	26	57	123

Monday, February 12, 2024

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

Scenario: OYC
Road Name: Brennan Av.
Road Segment: n/o Morgan St.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	440 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	44 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-15.44	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-24.03	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-23.45	2.69	-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:	50.3	48.4	46.2	41.2	49.5	50.0
Medium Trucks:	53.2	51.5	47.1	44.4	52.5	52.9
Heavy Trucks:	59.6	58.1	54.7	46.9	57.4	58.0
Vehicle Noise:	60.9	59.3	55.9	49.5	59.1	59.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	62
CNEL:	7	14	31	67

Monday, February 12, 2024

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

Scenario: OYC+P
Road Name: Brennan Av.
Road Segment: n/o Morgan St.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	597 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	60 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	12 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:	77.4%	11.6%	11.0%	56.81%
Medium Trucks:	81.0%	7.3%	11.7%	17.08%
Heavy Trucks:	85.4%	9.7%	4.8%	26.10%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	32.833
Medium Trucks:	32.562
Heavy Trucks:	32.589

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-15.44	2.64	-1.20	-4.52	0.000	0.000
Medium Trucks:	75.75	-20.66	2.69	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.57	-18.82	2.69	-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:	50.3	48.4	46.2	41.2	49.5	50.0
Medium Trucks:	56.6	54.9	50.4	47.7	55.9	56.2
Heavy Trucks:	64.2	62.8	59.4	51.5	62.0	62.6
Vehicle Noise:	65.1	63.5	60.1	53.3	63.1	63.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	53	115
CNEL:	13	27	58	125

Monday, February 12, 2024

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 and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,690 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	469 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.74	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-14.33	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-13.75	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.2	59.3	57.1	52.1	60.4	60.9
Medium Trucks:	63.9	62.2	57.7	55.0	63.2	63.5
Heavy Trucks:	69.8	68.3	64.9	57.0	67.5	68.1
Vehicle Noise:	71.2	69.7	66.2	59.9	69.5	70.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	47	101	218	469

Monday, February 12, 2024

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 and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,820 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	482 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	75.04%
Medium Trucks:	81.0%	7.3%	11.7%	11.33%
Heavy Trucks:	85.4%	9.7%	4.8%	13.62%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.74	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-13.95	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-13.15	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	59.3	57.1	52.1	60.4	60.9
Medium Trucks:	64.3	62.6	58.1	55.4	63.6	63.9
Heavy Trucks:	70.3	68.9	65.5	57.6	68.1	68.7
Vehicle Noise:	71.7	70.2	66.7	60.4	69.9	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	100	216	466
CNEL:	50	109	234	505

Monday, February 12, 2024

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

Scenario: OYC
Road Name: Indian Av.
Road Segment: n/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,760 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	576 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.85	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-13.44	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.86	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	60.2	58.0	53.0	61.3	61.8
Medium Trucks:	64.8	63.1	58.6	55.9	64.1	64.4
Heavy Trucks:	70.6	69.2	65.8	57.9	68.4	69.0
Vehicle Noise:	72.1	70.5	67.1	60.8	70.4	70.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	497
CNEL:	54	116	250	538

Monday, February 12, 2024

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

Scenario: OYC+P
Road Name: Indian Av.
Road Segment: n/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,890 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	589 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	75.42%
Medium Trucks:	81.0%	7.3%	11.7%	11.22%
Heavy Trucks:	85.4%	9.7%	4.8%	13.36%

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:	66.51	-4.85	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-13.13	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.37	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	60.2	58.0	53.0	61.3	61.8
Medium Trucks:	65.1	63.4	58.9	56.2	64.4	64.7
Heavy Trucks:	71.1	69.7	66.3	58.4	68.9	69.5
Vehicle Noise:	72.5	71.0	67.5	61.2	70.7	71.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	57	123	265	571

Monday, February 12, 2024

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

Scenario: E
Road Name: Indian Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,150 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	615 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.57	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-13.15	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.57	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:	62.4	60.5	58.3	53.3	61.6	62.1
Medium Trucks:	65.1	63.4	58.9	56.2	64.4	64.7
Heavy Trucks:	70.9	69.5	66.0	58.2	68.7	69.3
Vehicle Noise:	72.4	70.8	67.4	61.1	70.6	71.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	519
CNEL:	56	121	261	562

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

Scenario: E+P
Road Name: Indian Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,206 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	621 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	76.43%
Medium Trucks:	81.0%	7.3%	11.7%	10.90%
Heavy Trucks:	85.4%	9.7%	4.8%	12.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.57	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-13.02	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.37	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:	62.4	60.5	58.3	53.3	61.6	62.1
Medium Trucks:	65.2	63.5	59.0	56.3	64.5	64.8
Heavy Trucks:	71.1	69.7	66.2	58.4	68.9	69.5
Vehicle Noise:	72.6	71.0	67.6	61.3	70.8	71.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	532
CNEL:	58	124	267	576

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

Scenario: OYC
Road Name: Indian Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,190 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	719 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.89	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-12.47	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.89	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	61.2	59.0	54.0	62.3	62.8
Medium Trucks:	65.8	64.0	59.6	56.9	65.1	65.4
Heavy Trucks:	71.6	70.1	66.7	58.9	69.4	70.0
Vehicle Noise:	73.1	71.5	68.1	61.8	71.3	71.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	576
CNEL:	62	134	290	624

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

Scenario: OYC+P
Road Name: Indian Av.
Road Segment: s/o Ramona Expy
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,246 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	725 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	56 feet

Site Data

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.4%	11.6%	11.0%	76.52%
Medium Trucks:	81.0%	7.3%	11.7%	10.87%
Heavy Trucks:	85.4%	9.7%	4.8%	12.61%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	38.079
Medium Trucks:	37.846
Heavy Trucks:	37.869

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.89	1.67	-1.20	-4.63	0.000	0.000
Medium Trucks:	77.72	-12.36	1.71	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.72	1.71	-1.20	-5.46	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	61.2	59.0	54.0	62.3	62.8
Medium Trucks:	65.9	64.2	59.7	57.0	65.2	65.5
Heavy Trucks:	71.8	70.3	66.9	59.1	69.5	70.1
Vehicle Noise:	73.2	71.7	68.2	61.9	71.5	72.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	588
CNEL:	64	137	296	637

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

Scenario: E
Road Name: Ramona Expy.
Road Segment: e/o Webster Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,910 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,791 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.03	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.55	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.97	-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:	67.9	66.0	63.8	58.8	67.1	67.6
Medium Trucks:	70.1	68.4	64.0	61.3	69.5	69.8
Heavy Trucks:	75.1	73.6	70.2	62.4	72.9	73.5
Vehicle Noise:	76.9	75.3	71.9	65.8	75.2	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	205	442	952	2,051
CNEL:	222	478	1,030	2,218

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

Scenario: E+P
Road Name: Ramona Expy.
Road Segment: e/o Webster Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,910 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,791 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.03	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.55	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.97	-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:	67.9	66.0	63.8	58.8	67.1	67.6
Medium Trucks:	70.1	68.4	64.0	61.3	69.5	69.8
Heavy Trucks:	75.1	73.6	70.2	62.4	72.9	73.5
Vehicle Noise:	76.9	75.3	71.9	65.8	75.2	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	205	442	952	2,051
CNEL:	222	478	1,030	2,218

Monday, February 12, 2024

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

Scenario: OYC
Road Name: Ramona Expy.
Road Segment: e/o Webster Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,390 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	3,139 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.54	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.04	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.46	-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:	68.4	66.5	64.3	59.3	67.6	68.1
Medium Trucks:	70.7	68.9	64.5	61.8	70.0	70.3
Heavy Trucks:	75.6	74.1	70.7	62.9	73.4	74.0
Vehicle Noise:	77.4	75.8	72.4	66.3	75.7	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	222	478	1,029	2,218
CNEL:	240	517	1,114	2,399

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

Scenario: OYC+P
Road Name: Ramona Expy.
Road Segment: e/o Webster Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,390 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	3,139 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.54	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.04	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.46	-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:	68.4	66.5	64.3	59.3	67.6	68.1
Medium Trucks:	70.7	68.9	64.5	61.8	70.0	70.3
Heavy Trucks:	75.6	74.1	70.7	62.9	73.4	74.0
Vehicle Noise:	77.4	75.8	72.4	66.3	75.7	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	222	478	1,029	2,218
CNEL:	240	517	1,114	2,399

Monday, February 12, 2024

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

Scenario: E
Road Name: Ramona Expy.
Road Segment: w/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,440 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,844 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.12	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.47	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.89	-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:	68.0	66.1	63.9	58.9	67.2	67.7
Medium Trucks:	70.2	68.5	64.1	61.4	69.5	69.9
Heavy Trucks:	75.2	73.7	70.3	62.5	72.9	73.5
Vehicle Noise:	77.0	75.4	72.0	65.9	75.3	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	447	964	2,077
CNEL:	225	484	1,043	2,246

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

Scenario: E+P
Road Name: Ramona Expy.
Road Segment: w/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,936 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,894 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.51%
Medium Trucks:	81.0%	7.3%	11.7%	10.50%
Heavy Trucks:	85.4%	9.7%	4.8%	12.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.21	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.47	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.89	-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:	68.1	66.2	64.0	59.0	67.3	67.8
Medium Trucks:	70.2	68.5	64.1	61.4	69.5	69.9
Heavy Trucks:	75.2	73.7	70.3	62.5	72.9	73.5
Vehicle Noise:	77.0	75.4	72.0	65.9	75.3	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	448	966	2,081
CNEL:	225	485	1,045	2,252

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

Scenario: OYC
Road Name: Ramona Expy.
Road Segment: w/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,950 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	3,195 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.62	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-6.96	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.39	-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:	68.5	66.6	64.4	59.4	67.7	68.2
Medium Trucks:	70.7	69.0	64.6	61.9	70.0	70.4
Heavy Trucks:	75.7	74.2	70.8	63.0	73.4	74.0
Vehicle Noise:	77.5	75.9	72.5	66.4	75.8	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	224	483	1,042	2,244
CNEL:	243	523	1,127	2,428

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

Scenario: OYC+P
Road Name: Ramona Expy.
Road Segment: w/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,446 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	3,245 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.46%
Medium Trucks:	81.0%	7.3%	11.7%	10.52%
Heavy Trucks:	85.4%	9.7%	4.8%	12.02%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.71	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-6.96	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.39	-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:	68.6	66.7	64.5	59.5	67.8	68.3
Medium Trucks:	70.7	69.0	64.6	61.9	70.0	70.4
Heavy Trucks:	75.7	74.2	70.8	63.0	73.4	74.0
Vehicle Noise:	77.5	75.9	72.5	66.4	75.8	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	225	484	1,044	2,249
CNEL:	243	524	1,129	2,433

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

Scenario: E
Road Name: Ramona Expy.
Road Segment: e/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,000 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,800 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.05	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.54	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.96	-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:	67.9	66.0	63.8	58.8	67.1	67.6
Medium Trucks:	70.2	68.4	64.0	61.3	69.5	69.8
Heavy Trucks:	75.1	73.6	70.2	62.4	72.9	73.5
Vehicle Noise:	76.9	75.3	71.9	65.8	75.2	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	206	443	954	2,055
CNEL:	222	479	1,032	2,223

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

Scenario: E+P
Road Name: Ramona Expy.
Road Segment: e/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,496 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,850 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.51%
Medium Trucks:	81.0%	7.3%	11.7%	10.50%
Heavy Trucks:	85.4%	9.7%	4.8%	11.99%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.15	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-7.54	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.96	-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:	68.0	66.1	63.9	58.9	67.2	67.7
Medium Trucks:	70.2	68.4	64.0	61.3	69.5	69.8
Heavy Trucks:	75.1	73.6	70.2	62.4	72.9	73.5
Vehicle Noise:	76.9	75.3	71.9	65.9	75.3	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	206	444	956	2,060
CNEL:	223	480	1,034	2,228

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

Scenario: OYC
Road Name: Ramona Expy.
Road Segment: e/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,000 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	3,200 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.12%
Medium Trucks:	81.0%	7.3%	11.7%	10.68%
Heavy Trucks:	85.4%	9.7%	4.8%	12.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.63	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-6.96	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.38	-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:	68.5	66.6	64.4	59.4	67.7	68.2
Medium Trucks:	70.7	69.0	64.6	61.9	70.1	70.4
Heavy Trucks:	75.7	74.2	70.8	63.0	73.5	74.0
Vehicle Noise:	77.5	75.9	72.5	66.4	75.8	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	225	484	1,043	2,246
CNEL:	243	524	1,128	2,430

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

Scenario: OYC+P
Road Name: Ramona Expy.
Road Segment: e/o Indian Av.
Project Name: Ramona and Webster
Job Number: 15496

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,496 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	3,250 vehicles
Vehicle Speed:	50 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:	77.4%	11.6%	11.0%	77.46%
Medium Trucks:	81.0%	7.3%	11.7%	10.52%
Heavy Trucks:	85.4%	9.7%	4.8%	12.02%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	70.20	1.71	-2.12	-1.20	-4.76	0.000	0.000
Medium Trucks:	81.00	-6.96	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-6.38	-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:	68.6	66.7	64.5	59.5	67.8	68.3
Medium Trucks:	70.7	69.0	64.6	61.9	70.1	70.4
Heavy Trucks:	75.7	74.2	70.8	63.0	73.5	74.0
Vehicle Noise:	77.5	75.9	72.5	66.4	75.8	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	225	485	1,045	2,251
CNEL:	244	525	1,130	2,435

APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS (LMAX)

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15496 - Ramona and Webster

CadnaA Noise Prediction Model: 15496_08.cna
Date: 02.03.24
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	**Value**
General	
Max. Error (dB)	**0.00**
Max. Search Radius (#(Unit,LEN))	**2000.01**
Min. Dist Src to Rcvr	**0.00**
Partition	
Raster Factor	**0.50**
Max. Length of Section (#(Unit,LEN))	**999.99**
Min. Length of Section (#(Unit,LEN))	**1.01**
Min. Length of Section (%)	**0.00**
Proj. Line Sources	**On**
Proj. Area Sources	**On**
Ref. Time	
Daytime Penalty (dB)	**0.00**
Recr. Time Penalty (dB)	**5.00**
Night-time Penalty (dB)	**10.00**
DTM	
Standard Height (m)	**0.00**
Model of Terrain	**Triangulation**
Reflection	
max. Order of Reflection	**2**
Search Radius Src	**100.00**
Search Radius Rcvr	**100.00**
Max. Distance Source - Rcvr	**1000.00 1000.00**
Min. Distance Rvcr - Reflector	**1.00 1.00**
Min. Distance Source - Reflector	**0.10**
Industrial (ISO 9613)	
Lateral Diffraction	**some Obj**
Obst. within Area Src do not shield	**On**
Screening	**Incl. Ground Att. over Barrier**
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	**3.0 20.0 0.0**
Temperature (#(Unit,TEMP))	**10**
rel. Humidity (%)	**70**
Ground Absorption G	**0.50**
Wind Speed for Dir. (#(Unit,SPEED))	**3.0**
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1		R1	43.0	42.8	49.5	80.0	60.0	0.0				5.00	a	6259935.79	2252783.77	5.00
R2		R2	54.7	54.5	61.2	80.0	60.0	0.0				5.00	a	6260312.89	2252776.03	5.00
R3		R3	56.9	56.8	63.5	80.0	60.0	0.0				5.00	a	6260741.84	2252765.02	5.00
R4		R4	53.9	53.4	60.1	80.0	60.0	0.0				5.00	a	6259825.35	2250569.24	5.00
R5		R5	54.8	54.7	61.4	80.0	60.0	0.0				5.00	a	6259205.61	2250557.91	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	6260029.34	2250963.39	55.00
POINTSOURCE		AC02	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6259994.62	2250912.39	55.00
POINTSOURCE		AC03	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6260056.47	2252127.67	55.00
POINTSOURCE		AC04	89.4	89.4	89.4	Lw	89.4		585.00	0.00	252.00	5.00	g	6260015.24	2252173.25	55.00
POINTSOURCE		CAR001	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260391.75	2250812.57	5.00
POINTSOURCE		CAR002	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260363.54	2250851.63	5.00
POINTSOURCE		CAR003	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260341.84	2250812.57	5.00
POINTSOURCE		CAR004	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260314.71	2250850.55	5.00
POINTSOURCE		CAR005	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260289.76	2250813.65	5.00
POINTSOURCE		CAR006	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260249.61	2250849.46	5.00
POINTSOURCE		CAR007	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260211.63	2250814.74	5.00
POINTSOURCE		CAR008	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260194.27	2250848.38	5.00
POINTSOURCE		CAR009	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260161.72	2250813.65	5.00
POINTSOURCE		CAR010	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260142.19	2250851.63	5.00
POINTSOURCE		CAR011	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260094.45	2250812.57	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		CAR012	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260072.74	2250850.55	5.00
POINTSOURCE		CAR013	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260040.19	2250812.57	5.00
POINTSOURCE		CAR014	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260006.56	2250851.63	5.00
POINTSOURCE		CAR015	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6259972.92	2250813.65	5.00
POINTSOURCE		CAR016	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260989.63	2251771.77	5.00
POINTSOURCE		CAR017	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260530.64	2252099.46	5.00
POINTSOURCE		CAR018	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260461.20	2252123.33	5.00
POINTSOURCE		CAR019	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260461.20	2252181.93	5.00
POINTSOURCE		CAR020	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260513.28	2252171.08	5.00
POINTSOURCE		CAR021	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260512.20	2252214.48	5.00
POINTSOURCE		CAR022	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260530.64	2252270.90	5.00
POINTSOURCE		CAR023	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260441.67	2252268.73	5.00
POINTSOURCE		CAR024	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260405.86	2252231.84	5.00
POINTSOURCE		CAR025	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260391.75	2252270.90	5.00
POINTSOURCE		CAR026	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260342.93	2252230.75	5.00
POINTSOURCE		CAR027	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260317.97	2252271.99	5.00
POINTSOURCE		CAR028	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260288.67	2252230.75	5.00
POINTSOURCE		CAR029	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260238.76	2252270.90	5.00
POINTSOURCE		CAR030	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260213.80	2252230.75	5.00
POINTSOURCE		CAR031	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260184.51	2252270.90	5.00
POINTSOURCE		CAR032	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260098.79	2252231.84	5.00
POINTSOURCE		CAR033	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260071.66	2252269.82	5.00
POINTSOURCE		CAR034	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260045.62	2252230.75	5.00
POINTSOURCE		CAR035	91.4	91.4	91.4	Lw	91.4		900.00	0.00	270.00	5.00	a	6260014.15	2252269.82	5.00
POINTSOURCE		PUMP01	99.3	99.3	99.3	Lw	99.3		900.00	0.00	540.00	5.00	a	6260549.73	2252035.55	5.00
POINTSOURCE		TRASH01	102.8	102.8	102.8	Lw	102.8		900.00	0.00	270.00	5.00	a	6260545.83	2252035.44	5.00
POINTSOURCE		TRASH02	102.8	102.8	102.8	Lw	102.8		900.00	0.00	270.00	5.00	a	6260546.92	2252013.74	5.00
POINTSOURCE		TRASH03	102.8	102.8	102.8	Lw	102.8		900.00	0.00	270.00	5.00	a	6260431.90	2250884.18	5.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE		TRUCK01	91.4	91.4	91.4	63.6	63.6	63.6	Lw	91.4									8	a
LINESOURCE		TRUCK02	91.4	91.4	91.4	67.8	67.8	67.8	Lw	91.4									8	a
LINESOURCE		TRUCK03	91.4	91.4	91.4	67.8	67.8	67.8	Lw	91.4									8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	a			6260478.56	2252041.95	8.00	0.00
						6260465.54	2250785.44	8.00	0.00
						6261069.92	2250781.10	8.00	0.00
						6261068.84	2250908.05	8.00	0.00
LINESOURCE	TRUCK02	8.00	a			6261220.75	2251712.09	8.00	0.00
						6260475.16	2251714.28	8.00	0.00
LINESOURCE	TRUCK03	8.00	a			6261212.35	2250905.88	8.00	0.00
						6261068.84	2250908.05	8.00	0.00
						6260466.90	2250916.79	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		COLD01	119.7	119.7	119.7	81.3	81.3	81.3	Lw	119.7					8	a
AREASOURCE		COLD02	119.7	119.7	119.7	85.6	85.6	85.6	Lw	119.7					8	a
AREASOURCE		COLD03	119.7	119.7	119.7	81.9	81.9	81.9	Lw	119.7					8	a
AREASOURCE		COLD04	119.7	119.7	119.7	85.5	85.5	85.5	Lw	119.7					8	a
AREASOURCE		COLD05	119.7	119.7	119.7	83.5	83.5	83.5	Lw	119.7					8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	COLD01	8.00	a			6260376.94	2252022.33	8.00	0.00
						6260451.14	2252021.70	8.00	0.00
						6260439.50	2251005.71	8.00	0.00
						6260367.88	2251004.63	8.00	0.00
AREASOURCE	COLD02	8.00	a			6260500.26	2252000.72	8.00	0.00
						6260559.94	2252000.72	8.00	0.00
						6260558.86	2251803.24	8.00	0.00
						6260768.27	2251798.90	8.00	0.00
						6260769.36	2251740.30	8.00	0.00
						6260500.26	2251745.73	8.00	0.00
AREASOURCE	COLD03	8.00	a			6260502.43	2251680.62	8.00	0.00
						6260553.43	2251681.71	8.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						6260551.26	2251004.63	8.00	0.00
						6261042.80	2250998.11	8.00	0.00
						6261046.05	2250946.03	8.00	0.00
						6260495.92	2250951.46	8.00	0.00
AREASOURCE	COLD04	8.00	a			6260527.39	2250879.84	8.00	0.00
						6261011.33	2250872.25	8.00	0.00
						6261010.24	2250813.65	8.00	0.00
						6260525.22	2250821.25	8.00	0.00
AREASOURCE	COLD05	8.00	a			6261110.07	2250837.52	8.00	0.00
						6261167.58	2250837.52	8.00	0.00
						6261166.02	2250746.07	8.00	0.00
						6261109.89	2250742.77	8.00	0.00
						6261105.73	2250687.79	8.00	0.00
						6260424.31	2250696.47	8.00	0.00
						6260423.22	2250750.72	8.00	0.00
						6261105.73	2250747.46	8.00	0.00

Barrier(s)

Name	Sel.	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)
BARRIERPLANNED			0						0.00	a		6260435.16	2252045.21	0.00	0.00
												6260465.65	2252045.68	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260491.51	2252046.27	0.00	0.00
												6260565.76	2252046.85	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260425.80	2250873.36	0.00	0.00
												6260425.48	2250843.06	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260425.32	2250817.39	0.00	0.00
												6260423.88	2250686.49	0.00	0.00
BARRIERPLANNED			0						0.00	a		6261137.60	2251005.60	0.00	0.00
												6261137.07	2250935.54	0.00	0.00
BARRIERPLANNED			0						0.00	a		6261137.07	2250885.25	0.00	0.00
												6261135.80	2250840.80	0.00	0.00
												6261169.58	2250840.04	0.00	0.00
												6261167.81	2250673.74	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260919.70	2251802.10	0.00	0.00
												6260919.07	2251740.21	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260917.11	2251680.07	0.00	0.00
												6260917.11	2251668.41	0.00	0.00
												6260658.58	2251672.51	0.00	0.00
												6260562.12	2251674.04	0.00	0.00
												6260560.42	2251456.74	0.00	0.00
												6260558.80	2251252.02	0.00	0.00
												6260556.92	2251012.06	0.00	0.00
												6260752.04	2251009.89	0.00	0.00
												6261029.41	2251006.81	0.00	0.00
												6261137.60	2251005.60	0.00	0.00
BARRIEREXISTING			0						6.00	a		6259931.71	2252777.70	6.00	0.00
												6260870.99	2252758.55	6.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00006	x	0		50.00	a	6259984.85	2252201.46	50.00	0.00
									6260430.82	2252203.63	50.00	0.00
									6260435.16	2252045.21	50.00	0.00
									6260373.31	2252046.29	50.00	0.00
									6260365.71	2250979.67	50.00	0.00
									6260425.39	2250979.67	50.00	0.00
									6260427.56	2250873.33	50.00	0.00
									6259964.24	2250882.01	50.00	0.00
BUILDING			BUILDING00007	x	0		25.00	a	6259941.67	2252710.28	25.00	0.00
									6260067.32	2252704.16	25.00	0.00
									6260066.55	2252654.36	25.00	0.00
									6259943.21	2252657.42	25.00	0.00
BUILDING			BUILDING00008	x	0		25.00	a	6260147.00	2252661.25	25.00	0.00
									6260314.02	2252660.49	25.00	0.00
									6260316.31	2252571.61	25.00	0.00
									6260145.47	2252572.38	25.00	0.00
BUILDING			BUILDING00009	x	0		25.00	a	6260376.07	2252734.80	25.00	0.00
									6260516.27	2252734.80	25.00	0.00
									6260516.27	2252682.70	25.00	0.00
									6260377.60	2252682.70	25.00	0.00
BUILDING			BUILDING00010	x	0		25.00	a	6260474.90	2252607.62	25.00	0.00

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
									6260514.74	2252608.39	25.00	0.00
									6260513.98	2252514.92	25.00	0.00
									6260470.31	2252514.15	25.00	0.00
BUILDING			BUILDING00011	x	0		25.00	a	6260794.38	2252583.87	25.00	0.00
									6260833.45	2252583.87	25.00	0.00
									6260831.16	2252507.26	25.00	0.00
									6260793.62	2252509.56	25.00	0.00
BUILDING			BUILDING00012	x	0		25.00	a	6260050.38	2250726.95	25.00	0.00
									6260283.64	2250728.71	25.00	0.00
									6260287.17	2250608.55	25.00	0.00
									6260048.61	2250610.32	25.00	0.00
BUILDING			BUILDING00013	x	0		40.00	a	6260644.13	2250608.55	40.00	0.00
									6260967.51	2250610.32	40.00	0.00
									6260967.51	2250559.07	40.00	0.00
									6261110.65	2250555.54	40.00	0.00
									6261108.88	2250253.36	40.00	0.00
									6260955.14	2250253.36	40.00	0.00
									6260958.68	2250180.91	40.00	0.00
									6260637.06	2250186.21	40.00	0.00

APPENDIX 9.2:

CADNAA OPERATIONAL NOISE MODEL INPUTS (LEQ)

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15496 - Ramona and Webster

CadnaA Noise Prediction Model: 15496_08_CNEL.cna
Date: 02.03.24
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	**Value**
General	
Max. Error (dB)	**0.00**
Max. Search Radius (#(Unit,LEN))	**2000.01**
Min. Dist Src to Rcvr	**0.00**
Partition	
Raster Factor	**0.50**
Max. Length of Section (#(Unit,LEN))	**999.99**
Min. Length of Section (#(Unit,LEN))	**1.01**
Min. Length of Section (%)	**0.00**
Proj. Line Sources	**On**
Proj. Area Sources	**On**
Ref. Time	
Daytime Penalty (dB)	**0.00**
Recr. Time Penalty (dB)	**5.00**
Night-time Penalty (dB)	**10.00**
DTM	
Standard Height (m)	**0.00**
Model of Terrain	**Triangulation**
Reflection	
max. Order of Reflection	**2**
Search Radius Src	**100.00**
Search Radius Rcvr	**100.00**
Max. Distance Source - Rcvr	**1000.00 1000.00**
Min. Distance Rvcr - Reflector	**1.00 1.00**
Min. Distance Source - Reflector	**0.10**
Industrial (ISO 9613)	
Lateral Diffraction	**some Obj**
Obst. within Area Src do not shield	**On**
Screening	**Incl. Ground Att. over Barrier**
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	**3.0 20.0 0.0**
Temperature (#(Unit,TEMP))	**10**
rel. Humidity (%)	**70**
Ground Absorption G	**0.50**
Wind Speed for Dir. (#(Unit,SPEED))	**3.0**
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1		R1	35.5	35.0	41.7	80.0	60.0	0.0				5.00	a	6259935.79	2252783.77	5.00
R2		R2	46.6	46.3	53.0	80.0	60.0	0.0				5.00	a	6260312.89	2252776.03	5.00
R3		R3	48.7	48.6	55.3	80.0	60.0	0.0				5.00	a	6260741.84	2252765.02	5.00
R4		R4	47.3	46.0	52.7	80.0	60.0	0.0				5.00	a	6259825.35	2250569.24	5.00
R5		R5	47.0	46.7	53.4	80.0	60.0	0.0				5.00	a	6259205.61	2250557.91	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	6260029.34	2250963.39	55.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6259994.62	2250912.39	55.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6260056.47	2252127.67	55.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6260015.24	2252173.25	55.00
POINTSOURCE		CAR001	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260391.75	2250812.57	5.00
POINTSOURCE		CAR002	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260363.54	2250851.63	5.00
POINTSOURCE		CAR003	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260341.84	2250812.57	5.00
POINTSOURCE		CAR004	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260314.71	2250850.55	5.00
POINTSOURCE		CAR005	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260289.76	2250813.65	5.00
POINTSOURCE		CAR006	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260249.61	2250849.46	5.00
POINTSOURCE		CAR007	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260211.63	2250814.74	5.00
POINTSOURCE		CAR008	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260194.27	2250848.38	5.00
POINTSOURCE		CAR009	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260161.72	2250813.65	5.00
POINTSOURCE		CAR010	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260142.19	2250851.63	5.00
POINTSOURCE		CAR011	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260094.45	2250812.57	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		CAR012	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260072.74	2250850.55	5.00
POINTSOURCE		CAR013	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260040.19	2250812.57	5.00
POINTSOURCE		CAR014	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260006.56	2250851.63	5.00
POINTSOURCE		CAR015	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6259972.92	2250813.65	5.00
POINTSOURCE		CAR016	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260989.63	2251771.77	5.00
POINTSOURCE		CAR017	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260530.64	2252099.46	5.00
POINTSOURCE		CAR018	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260461.20	2252123.33	5.00
POINTSOURCE		CAR019	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260461.20	2252181.93	5.00
POINTSOURCE		CAR020	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260513.28	2252171.08	5.00
POINTSOURCE		CAR021	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260512.20	2252214.48	5.00
POINTSOURCE		CAR022	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260530.64	2252270.90	5.00
POINTSOURCE		CAR023	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260441.67	2252268.73	5.00
POINTSOURCE		CAR024	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260405.86	2252231.84	5.00
POINTSOURCE		CAR025	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260391.75	2252270.90	5.00
POINTSOURCE		CAR026	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260342.93	2252230.75	5.00
POINTSOURCE		CAR027	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260317.97	2252271.99	5.00
POINTSOURCE		CAR028	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260288.67	2252230.75	5.00
POINTSOURCE		CAR029	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260238.76	2252270.90	5.00
POINTSOURCE		CAR030	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260213.80	2252230.75	5.00
POINTSOURCE		CAR031	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260184.51	2252270.90	5.00
POINTSOURCE		CAR032	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260098.79	2252231.84	5.00
POINTSOURCE		CAR033	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260071.66	2252269.82	5.00
POINTSOURCE		CAR034	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260045.62	2252230.75	5.00
POINTSOURCE		CAR035	87.8	87.8	87.8	Lw	87.8		900.00	0.00	270.00	5.00	a	6260014.15	2252269.82	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6260545.83	2252035.44	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6260546.92	2252013.74	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6260431.90	2250884.18	5.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE		TRUCK01	89.7	89.7	89.7	61.9	61.9	61.9	Lw	89.7									8	a
LINESOURCE		TRUCK02	89.7	89.7	89.7	66.1	66.1	66.1	Lw	89.7									8	a
LINESOURCE		TRUCK03	89.7	89.7	89.7	66.1	66.1	66.1	Lw	89.7									8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	a			6260478.56	2252041.95	8.00	0.00
						6260465.54	2250785.44	8.00	0.00
						6261069.92	2250781.10	8.00	0.00
						6261068.84	2250908.05	8.00	0.00
LINESOURCE	TRUCK02	8.00	a			6261220.75	2251712.09	8.00	0.00
						6260475.16	2251714.28	8.00	0.00
LINESOURCE	TRUCK03	8.00	a			6261212.35	2250905.88	8.00	0.00
						6261068.84	2250908.05	8.00	0.00
						6260466.90	2250916.79	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		COLD01	111.5	111.5	111.5	73.1	73.1	73.1	Lw	111.5					8	a
AREASOURCE		COLD02	111.5	111.5	111.5	77.4	77.4	77.4	Lw	111.5					8	a
AREASOURCE		COLD03	111.5	111.5	111.5	73.7	73.7	73.7	Lw	111.5					8	a
AREASOURCE		COLD04	111.5	111.5	111.5	77.3	77.3	77.3	Lw	111.5					8	a
AREASOURCE		COLD05	111.5	111.5	111.5	75.3	75.3	75.3	Lw	111.5					8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	COLD01	8.00	a			6260376.94	2252022.33	8.00	0.00
						6260451.14	2252021.70	8.00	0.00
						6260439.50	2251005.71	8.00	0.00
						6260367.88	2251004.63	8.00	0.00
AREASOURCE	COLD02	8.00	a			6260500.26	2252000.72	8.00	0.00
						6260559.94	2252000.72	8.00	0.00
						6260558.86	2251803.24	8.00	0.00
						6260768.27	2251798.90	8.00	0.00
						6260769.36	2251740.30	8.00	0.00
						6260500.26	2251745.73	8.00	0.00
AREASOURCE	COLD03	8.00	a			6260502.43	2251680.62	8.00	0.00
						6260553.43	2251681.71	8.00	0.00
						6260551.26	2251004.63	8.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						6261042.80	2250998.11	8.00	0.00
						6261046.05	2250946.03	8.00	0.00
						6260495.92	2250951.46	8.00	0.00
AREASOURCE	COLD04	8.00	a			6260527.39	2250879.84	8.00	0.00
						6261011.33	2250872.25	8.00	0.00
						6261010.24	2250813.65	8.00	0.00
						6260525.22	2250821.25	8.00	0.00
AREASOURCE	COLD05	8.00	a			6261110.07	2250837.52	8.00	0.00
						6261167.58	2250837.52	8.00	0.00
						6261166.02	2250746.07	8.00	0.00
						6261109.89	2250742.77	8.00	0.00
						6261105.73	2250687.79	8.00	0.00
						6260424.31	2250696.47	8.00	0.00
						6260423.22	2250750.72	8.00	0.00
						6261105.73	2250747.46	8.00	0.00

Barrier(s)

Name	Sel.	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)
BARRIERPLANNED			0						0.00	a		6260435.16	2252045.21	0.00	0.00
												6260465.65	2252045.68	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260491.51	2252046.27	0.00	0.00
												6260565.76	2252046.85	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260425.80	2250873.36	0.00	0.00
												6260425.48	2250843.06	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260425.32	2250817.39	0.00	0.00
												6260423.88	2250686.49	0.00	0.00
BARRIERPLANNED			0						0.00	a		6261137.60	2251005.60	0.00	0.00
												6261137.07	2250935.54	0.00	0.00
BARRIERPLANNED			0						0.00	a		6261137.07	2250885.25	0.00	0.00
												6261135.80	2250840.80	0.00	0.00
												6261169.58	2250840.04	0.00	0.00
												6261167.81	2250673.74	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260919.70	2251802.10	0.00	0.00
												6260919.07	2251740.21	0.00	0.00
BARRIERPLANNED			0						0.00	a		6260917.11	2251680.07	0.00	0.00
												6260917.11	2251668.41	0.00	0.00
												6260658.58	2251672.51	0.00	0.00
												6260562.12	2251674.04	0.00	0.00
												6260560.42	2251456.74	0.00	0.00
												6260558.80	2251252.02	0.00	0.00
												6260556.92	2251012.06	0.00	0.00
												6260752.04	2251009.89	0.00	0.00
												6261029.41	2251006.81	0.00	0.00
												6261137.60	2251005.60	0.00	0.00
BARRIEREXISTING			0						6.00	a		6259931.71	2252777.70	6.00	0.00
												6260870.99	2252758.55	6.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00006	x	0		50.00	a	6259984.85	2252201.46	50.00	0.00
									6260430.82	2252203.63	50.00	0.00
									6260435.16	2252045.21	50.00	0.00
									6260373.31	2252046.29	50.00	0.00
									6260365.71	2250979.67	50.00	0.00
									6260425.39	2250979.67	50.00	0.00
									6260427.56	2250873.33	50.00	0.00
									6259964.24	2250882.01	50.00	0.00
BUILDING			BUILDING00007	x	0		25.00	a	6259941.67	2252710.28	25.00	0.00
									6260067.32	2252704.16	25.00	0.00
									6260066.55	2252654.36	25.00	0.00
									6259943.21	2252657.42	25.00	0.00
BUILDING			BUILDING00008	x	0		25.00	a	6260147.00	2252661.25	25.00	0.00
									6260314.02	2252660.49	25.00	0.00
									6260316.31	2252571.61	25.00	0.00
									6260145.47	2252572.38	25.00	0.00
BUILDING			BUILDING00009	x	0		25.00	a	6260376.07	2252734.80	25.00	0.00
									6260516.27	2252734.80	25.00	0.00
									6260516.27	2252682.70	25.00	0.00
									6260377.60	2252682.70	25.00	0.00
BUILDING			BUILDING00010	x	0		25.00	a	6260474.90	2252607.62	25.00	0.00
									6260514.74	2252608.39	25.00	0.00

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
									6260513.98	2252514.92	25.00	0.00
									6260470.31	2252514.15	25.00	0.00
BUILDING			BUILDING00011	x	0		25.00	a	6260794.38	2252583.87	25.00	0.00
									6260833.45	2252583.87	25.00	0.00
									6260831.16	2252507.26	25.00	0.00
									6260793.62	2252509.56	25.00	0.00
BUILDING			BUILDING00012	x	0		25.00	a	6260050.38	2250726.95	25.00	0.00
									6260283.64	2250728.71	25.00	0.00
									6260287.17	2250608.55	25.00	0.00
									6260048.61	2250610.32	25.00	0.00
BUILDING			BUILDING00013	x	0		40.00	a	6260644.13	2250608.55	40.00	0.00
									6260967.51	2250610.32	40.00	0.00
									6260967.51	2250559.07	40.00	0.00
									6261110.65	2250555.54	40.00	0.00
									6261108.88	2250253.36	40.00	0.00
									6260955.14	2250253.36	40.00	0.00
									6260958.68	2250180.91	40.00	0.00
									6260637.06	2250186.21	40.00	0.00

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS

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CadnaA Noise Prediction Model: 15496_06_Construction.cna
Date: 13.02.24
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	**Value**
General	
Max. Error (dB)	**0.00**
Max. Search Radius (#(Unit,LEN))	**2000.01**
Min. Dist Src to Rcvr	**0.00**
Partition	
Raster Factor	**0.50**
Max. Length of Section (#(Unit,LEN))	**999.99**
Min. Length of Section (#(Unit,LEN))	**1.01**
Min. Length of Section (%)	**0.00**
Proj. Line Sources	**On**
Proj. Area Sources	**On**
Ref. Time	
Daytime Penalty (dB)	**0.00**
Recr. Time Penalty (dB)	**5.00**
Night-time Penalty (dB)	**10.00**
DTM	
Standard Height (m)	**0.00**
Model of Terrain	**Triangulation**
Reflection	
max. Order of Reflection	**2**
Search Radius Src	**100.00**
Search Radius Rcvr	**100.00**
Max. Distance Source - Rcvr	**1000.00 1000.00**
Min. Distance Rvcr - Reflector	**1.00 1.00**
Min. Distance Source - Reflector	**0.10**
Industrial (ISO 9613)	
Lateral Diffraction	**some Obj**
Obst. within Area Src do not shield	**On**
Screening	**Incl. Ground Att. over Barrier**
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	**3.0 20.0 0.0**
Temperature (#(Unit,TEMP))	**10**
rel. Humidity (%)	**70**
Ground Absorption G	**0.50**
Wind Speed for Dir. (#(Unit,SPEED))	**3.0**
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1		R1	61.4	61.4	68.1	80.0	60.0	0.0				5.00	a	6259935.79	2252783.77	5.00
R2		R2	64.9	64.9	71.6	80.0	60.0	0.0				5.00	a	6260312.89	2252776.03	5.00
R3		R3	66.1	66.1	72.8	80.0	60.0	0.0				5.00	a	6260741.84	2252765.02	5.00
R4		R4	74.1	74.1	80.7	80.0	60.0	0.0				5.00	a	6259825.35	2250569.24	5.00
R5		R5	70.5	70.5	77.1	80.0	60.0	0.0				5.00	a	6259205.61	2250557.91	5.00
R6		R6	85.6	85.6	92.3	80.0	60.0	0.0				5.00	a	6260561.00	2251049.08	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
SITEBOUNDARY		CONSTRUCTION	135.7	135.7	135.7	85.0	85.0	85.0	Lw''	85					8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	a			6260563.17	2251806.33	8.00	0.00
						6261221.50	2251798.52	8.00	0.00
						6261219.42	2251663.62	8.00	0.00
						6260559.34	2251681.46	8.00	0.00
						6260552.28	2251006.49	8.00	0.00
						6261212.65	2251002.91	8.00	0.00
						6261211.65	2250673.27	8.00	0.00
						6260415.69	2250681.69	8.00	0.00
						6260417.54	2250787.87	8.00	0.00

Name	ID	Height			Coordinates			
		Begin		End	x	y	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
					6259918.64	2250790.71	8.00	0.00
					6259931.74	2252276.04	8.00	0.00
					6259952.14	2252286.23	8.00	0.00
					6260568.29	2252281.81	8.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00007	x	0		25.00	a	6259941.67	2252710.28	25.00	0.00
									6260067.32	2252704.16	25.00	0.00
									6260066.55	2252654.36	25.00	0.00
									6259943.21	2252657.42	25.00	0.00
BUILDING			BUILDING00008	x	0		25.00	a	6260147.00	2252661.25	25.00	0.00
									6260314.02	2252660.49	25.00	0.00
									6260316.31	2252571.61	25.00	0.00
									6260145.47	2252572.38	25.00	0.00
BUILDING			BUILDING00009	x	0		25.00	a	6260376.07	2252734.80	25.00	0.00
									6260516.27	2252734.80	25.00	0.00
									6260516.27	2252682.70	25.00	0.00
									6260377.60	2252682.70	25.00	0.00
BUILDING			BUILDING00010	x	0		25.00	a	6260474.90	2252607.62	25.00	0.00
									6260514.74	2252608.39	25.00	0.00
									6260513.98	2252514.92	25.00	0.00
									6260470.31	2252514.15	25.00	0.00
BUILDING			BUILDING00011	x	0		25.00	a	6260794.38	2252583.87	25.00	0.00
									6260833.45	2252583.87	25.00	0.00
									6260831.16	2252507.26	25.00	0.00
									6260793.62	2252509.56	25.00	0.00
BUILDING			BUILDING00012	x	0		25.00	a	6260050.38	2250726.95	25.00	0.00
									6260283.64	2250728.71	25.00	0.00
									6260287.17	2250608.55	25.00	0.00
									6260048.61	2250610.32	25.00	0.00
BUILDING			BUILDING00013	x	0		40.00	a	6260644.13	2250608.55	40.00	0.00
									6260967.51	2250610.32	40.00	0.00
									6260967.51	2250559.07	40.00	0.00
									6261110.65	2250555.54	40.00	0.00
									6261108.88	2250253.36	40.00	0.00
									6260955.14	2250253.36	40.00	0.00
									6260958.68	2250180.91	40.00	0.00
									6260637.06	2250186.21	40.00	0.00

APPENDIX 10.2:

CADNAA CONCRETE POUR NOISE MODEL INPUTS

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15496 - Ramona and Webster

CadnaA Noise Prediction Model: 15496_08_Pour.cna
Date: 02.03.24
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	**Value**
General	
Max. Error (dB)	**0.00**
Max. Search Radius (#(Unit,LEN))	**2000.01**
Min. Dist Src to Rcvr	**0.00**
Partition	
Raster Factor	**0.50**
Max. Length of Section (#(Unit,LEN))	**999.99**
Min. Length of Section (#(Unit,LEN))	**1.01**
Min. Length of Section (%)	**0.00**
Proj. Line Sources	**On**
Proj. Area Sources	**On**
Ref. Time	
Daytime Penalty (dB)	**0.00**
Recr. Time Penalty (dB)	**5.00**
Night-time Penalty (dB)	**10.00**
DTM	
Standard Height (m)	**0.00**
Model of Terrain	**Triangulation**
Reflection	
max. Order of Reflection	**2**
Search Radius Src	**100.00**
Search Radius Rcvr	**100.00**
Max. Distance Source - Rcvr	**1000.00 1000.00**
Min. Distance Rvcr - Reflector	**1.00 1.00**
Min. Distance Source - Reflector	**0.10**
Industrial (ISO 9613)	
Lateral Diffraction	**some Obj**
Obst. within Area Src do not shield	**On**
Screening	**Incl. Ground Att. over Barrier**
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	**3.0 20.0 0.0**
Temperature (#(Unit,TEMP))	**10**
rel. Humidity (%)	**70**
Ground Absorption G	**0.50**
Wind Speed for Dir. (#(Unit,SPEED))	**3.0**
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1		R1	57.4	57.4	64.1	80.0	60.0	0.0				5.00	a	6259935.79	2252783.77	5.00
R2		R2	59.1	59.1	65.8	80.0	60.0	0.0				5.00	a	6260312.89	2252776.03	5.00
R3		R3	62.7	62.7	69.4	80.0	60.0	0.0				5.00	a	6260741.84	2252765.02	5.00
R4		R4	71.5	71.5	78.2	80.0	60.0	0.0				5.00	a	6259825.35	2250569.24	5.00
R5		R5	67.7	67.7	74.4	80.0	60.0	0.0				5.00	a	6259205.61	2250557.91	5.00
R6		R6	76.2	76.2	82.8	80.0	60.0	0.0				5.00	a	6260561.00	2251049.08	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		POUR	132.0	132.0	132.0	85.0	85.0	85.0	Lw"	85					8	a

Name	ID	Height			Coordinates			
		Begin		End	x	y	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BUILDING	POUR	8.00	a		6259984.85	2252201.46	8.00	0.00
					6260430.82	2252203.63	8.00	0.00
					6260435.16	2252045.21	8.00	0.00
					6260373.31	2252046.29	8.00	0.00
					6260365.71	2250979.67	8.00	0.00
					6260425.39	2250979.67	8.00	0.00
					6260427.56	2250873.33	8.00	0.00
					6259964.24	2250882.01	8.00	0.00

Barrier(s)

Name	Sel.	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		6259931.71	2252777.70	6.00	0.00
												6260870.99	2252758.55	6.00	0.00
BARRIERTEMP			0						0.00	a		6261212.65	2251004.77	0.00	0.00
												6260556.92	2251012.06	0.00	0.00
												6260562.12	2251674.04	0.00	0.00
												6261219.42	2251663.62	0.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00007	x	0		25.00	a	6259941.67	2252710.28	25.00	0.00
									6260067.32	2252704.16	25.00	0.00
									6260066.55	2252654.36	25.00	0.00
									6259943.21	2252657.42	25.00	0.00
BUILDING			BUILDING00008	x	0		25.00	a	6260147.00	2252661.25	25.00	0.00
									6260314.02	2252660.49	25.00	0.00
									6260316.31	2252571.61	25.00	0.00
									6260145.47	2252572.38	25.00	0.00
BUILDING			BUILDING00009	x	0		25.00	a	6260376.07	2252734.80	25.00	0.00
									6260516.27	2252734.80	25.00	0.00
									6260516.27	2252682.70	25.00	0.00
									6260377.60	2252682.70	25.00	0.00
BUILDING			BUILDING00010	x	0		25.00	a	6260474.90	2252607.62	25.00	0.00
									6260514.74	2252608.39	25.00	0.00
									6260513.98	2252514.92	25.00	0.00
									6260470.31	2252514.15	25.00	0.00
BUILDING			BUILDING00011	x	0		25.00	a	6260794.38	2252583.87	25.00	0.00
									6260833.45	2252583.87	25.00	0.00
									6260831.16	2252507.26	25.00	0.00
									6260793.62	2252509.56	25.00	0.00
BUILDING			BUILDING00012	x	0		25.00	a	6260050.38	2250726.95	25.00	0.00
									6260283.64	2250728.71	25.00	0.00
									6260287.17	2250608.55	25.00	0.00
									6260048.61	2250610.32	25.00	0.00
BUILDING			BUILDING00013	x	0		40.00	a	6260644.13	2250608.55	40.00	0.00
									6260967.51	2250610.32	40.00	0.00
									6260967.51	2250559.07	40.00	0.00
									6261110.65	2250555.54	40.00	0.00
									6261108.88	2250253.36	40.00	0.00
									6260955.14	2250253.36	40.00	0.00
									6260958.68	2250180.91	40.00	0.00
									6260637.06	2250186.21	40.00	0.00