



COVA

NOISE AND VIBRATION ANALYSIS

Prepared By:

Bill Maddux, INCE | bmaddux@urbanxroads.com

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City of Coachella

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LIST OF ABBREVIATED TERMS

(1)	Reference
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
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
L_w	Sound power level
mph	Miles per hour
PPV	Peak Particle Velocity
Project	COVA
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and identify any necessary noise mitigation measures for the COVA development (Project) in the City of Coachella. The Project consists of 276 units and other residential amenities. This noise study has been prepared to satisfy applicable City of Coachella noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

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

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	6	Less Than Significant	-
Operational Noise	8	Less Than Significant	-
Construction Noise	9	Less Than Significant	-
Construction Vibration	9	Less Than Significant	-

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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 COVA ("Project"). This noise and vibration analysis briefly describes the Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for noise analysis, evaluates the future exterior noise environment, potential off-site traffic impacts, the Project-related long-term stationary-source operational noise, and Project-related short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The Project is located at the southwest corner of the Van Buren Street and Avenue 52 intersection in the City of Coachella. The Project is surrounded by agricultural uses to the north, east, south, and west, as shown in Exhibit 1-1.

1.2 PROJECT DESCRIPTION

The proposed Project consists of 276 units: 76 two-story single-family residences (SFR) with 4 to 6 bedrooms, 100 stacked flat units at three stories with 3 to 4 bedrooms, and 100 hotel casitas and cottages for short-term accommodations. The development includes a crystal lagoon and other residential amenities, including restaurants, a beach club, event space, pop-up shops, outdoor amphitheater, pools, recreation areas, and kids' play spaces. A preliminary site plan for the Project is shown in Exhibit 1-2.

EXHIBIT 1-1: PROJECT LOCATION

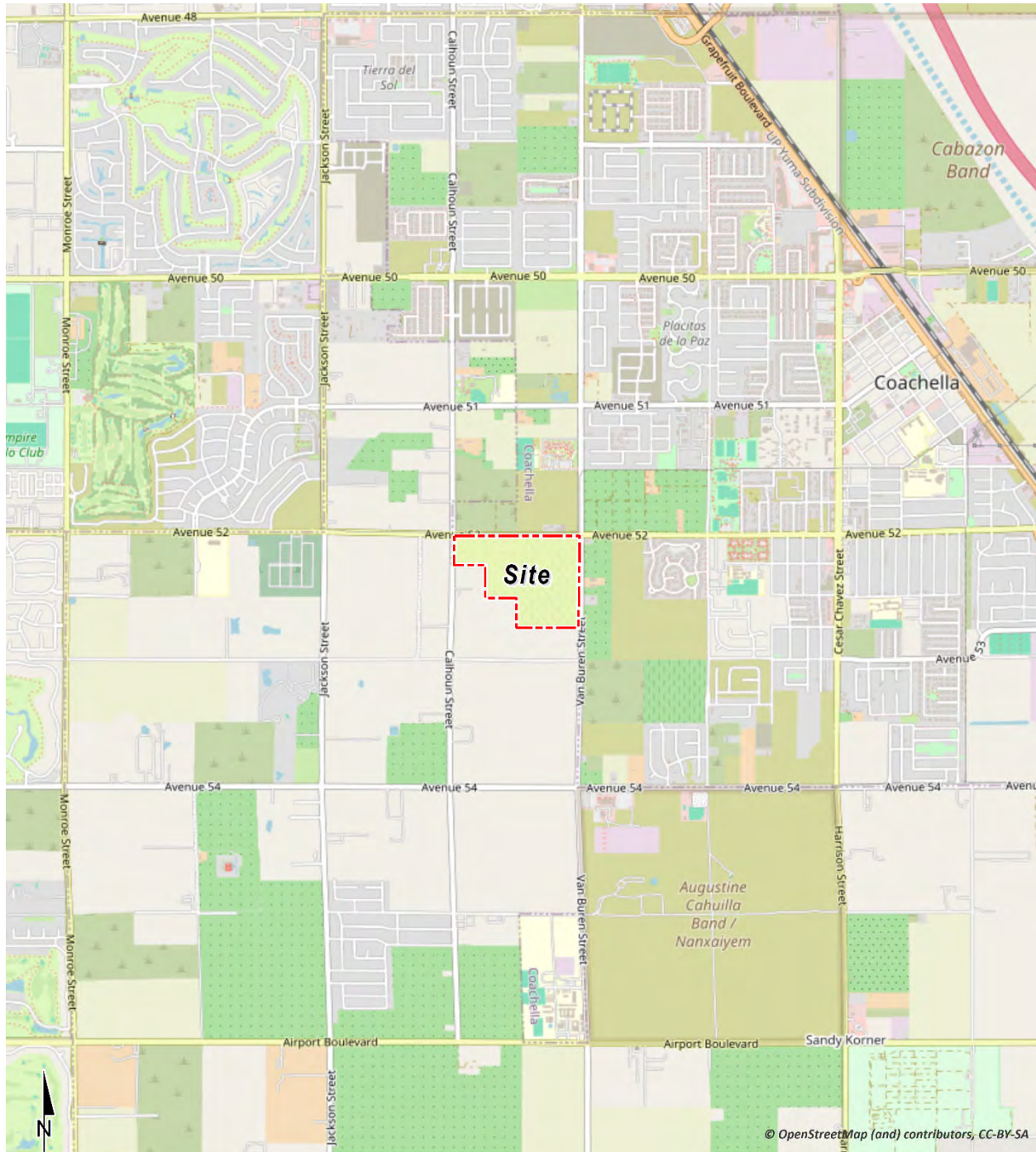
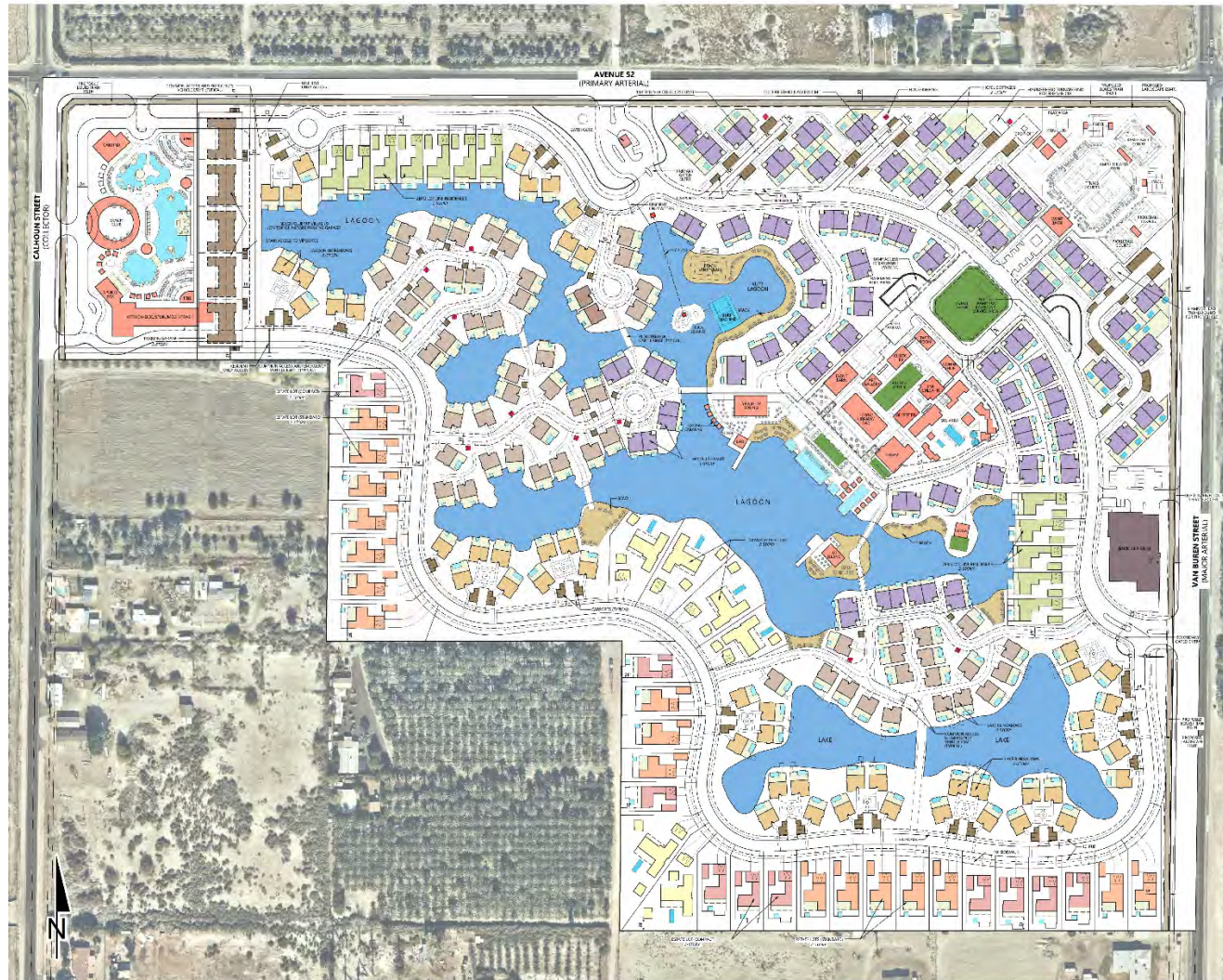


EXHIBIT 1-2: SITE PLAN



THE CITY OF COACHELLA OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA					
TECHNICAL SITE PLAN					
EXHIBIT DATE: JULY 3, 2025					
REVISIONS					
NO.	DATE	DESCRIPTION			
DATA TABLE					
APPLICANT / LAND OWNER	RELEVANT COACHELLA OWNER, LLC				
ADDRESS	6417 SELMA AVENUE HOLLYWOOD, CALIFORNIA 90028				
CONTACT	GRANT KING				
EXHIBIT PREPARER	MSA CONSULTING, INC.				
ADDRESS	3400 BOB HOPE DRIVE RANCHO MIRAGE, CALIFORNIA 92270				
CONTACT	PAUL DEPALATIS, AICP	TELEPHONE	(760) 320-9811		
SOURCE OF TOPOGRAPHY	INLAND AERIAL SURVEYS, INC.				
ADDRESS	7117 ARLINGTON AVENUE, SUITE A RIVERSIDE, CALIFORNIA 92503				
DATE OF TOPOGRAPHY	DECEMBER 22, 2021	TELEPHONE	(951) 687-4252		
ASSESSOR'S PARCEL NUMBERS	780-040-001, 780-040-003, 780-040-007 & 780-040-002				
LEGAL DESCRIPTION					
BEING A PORTION OF NE 1/4 OF SECTION 12, TOWNSHIP 6 SOUTH, RANGE 7 EAST, SAN BERNARDINO MERIDIAN.					
LAND USE DESCRIPTION					ACREAGE
EXISTING GROSS AREA					87.16 AC.
PROPOSED PUBLIC RIGHT OF WAY DEDICATION (CALHOUN STREET, AVENUE 52 & VAN BUREN STREET)					6.02 AC.
PROPOSED NET AREA					81.14 AC.
PROJECT STATISTICS					
SINGLE-FAMILY RESIDENTIAL					
GRAND ESTATE LOT	100' X 150'	# BEDS	# STORIES	# UNITS	FLOOR AREA (SF)
		6	2	6	8,665 SF/UNIT ¹
ESTATE LOT (STANDARD) + ADU ⁴	75' X 150'	4-5	2	17	4,721 SF/UNIT ¹
ESTATE LOT (COMPACT)	75' X 150'	4-5	2	10	4,403 SF/UNIT ¹
ZERO LOT LINE RESIDENCE	50' X 150'	4-5	2	12	4,585 SF/UNIT ¹
LAGOON BUNGALOW	NA	3-4	2	61	2,800 SF/UNIT ¹
LAKE BUNGALOW	NA	3-4	2	51	2,600 SF/UNIT ¹
TOTAL				157	613,932 SF ²
CONDO HOTEL					
HOTEL COIT AGES (1 ST FLOOR)	NA	1	1	120	1,248 SF/UNIT
HOTEL COIT AGES (2 ND FLOOR)	NA	1	1	120	1,148 SF/UNIT
TOTAL				240	287,640 SF
BEACH CLUB					
BEACH CLUB VILL VILAS	NA	1	1	5	6,629 SF/UNIT ³
TOTAL					32,245 SF ³
MAIN CLUB AMENITIES					
PUBLIC BEACH AREA					256,511 SF ³
SPORTS CENTER					5,100 SF ³
PARKING PROVIDED					
HOTEL (2-LEVEL BASEMENT PARKING GARAGE)		CAR SPACES		PARKING RATIO	CAR SPACES
		360		-	-
BEACH CLUB (2 LEVEL PARKING GARAGE)		149		-	-
HOTEL COTTAGES		47	0.2 SPACES/UNIT		50
BUNGALOWS		56	0.3 SPACES/UNIT		104
ZERO LOT LINE LOTS		24	2.0 SPACES/UNIT		-
ESTATE LOTS		54	2.0 SPACES/UNIT		27
GRAND ESTATE LOTS		12	2.0 SPACES/UNIT		12
TOTAL		696			193
NOTES:					
1. INTERIOR FLOOR AREA ONLY, DOESN'T INCLUDE EXT. COVERED AREA AND ADU AREA					
2. INCLUDES EXT. COVERED AREA AND ADU AREA					
3. PLEASE REFER TO LANDSCAPE PACKAGE FOR COMPLETE BLDG. PROGRAMMING					
4. ADU FLOOR AREA, 5' 6" SF					
WATER AMENITIES					
HOTEL LAGOON					AREA
LAKE					9.4 ACRES
BEACH CLUB LAGOON					2.5 ACRES
TOTAL					12.4 ACRES

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2 FUNDAMENTALS

Noise is simply defined as “unwanted sound.” Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear. Exhibit 2-1 presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

EXHIBIT 2-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE	
THRESHOLD OF PAIN		140	INTOLERABLE OR DEAFENING	HEARING LOSS	
NEAR JET ENGINE		130			
		120			
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110			
LOUD AUTO HORN		100	VERY NOISY	SPEECH INTERFERENCE	
GAS LAWN MOWER AT 1m (3 ft)		90			
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80	LOUD		
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70			
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60	MODERATE	SLEEP DISTURBANCE	
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50			
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40	FAINT	NO EFFECT	
QUIET SUBURBAN NIGHTTIME	LIBRARY	30			
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	VERY FAINT		
	BROADCAST/RECORDING STUDIO	10			
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0			

Source: Environmental Protection Agency Office of Noise Abatement and Control, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA/ONAC 550/9-74-004) March 1974.

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (2) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 1,000 feet, which can cause serious discomfort. (3) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

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

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level, is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA Leq sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA Leq sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise-sensitive time periods during the evening and night hours when noise can become more intrusive. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Coachella relies on the 24-hour CNEL level to assess land use compatibility with transportation-related noise sources.

2.3 SOUND PROPAGATION

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

2.3.1 Geometric Spreading

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

(2)

2.3.2 Ground Absorption

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed.

When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (4)

2.3.3 Atmospheric Effects

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

2.3.4 Shielding

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

2.4 NOISE CONTROL

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

2.5 NOISE BARRIER ATTENUATION

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

2.6 LAND USE COMPATIBILITY WITH NOISE

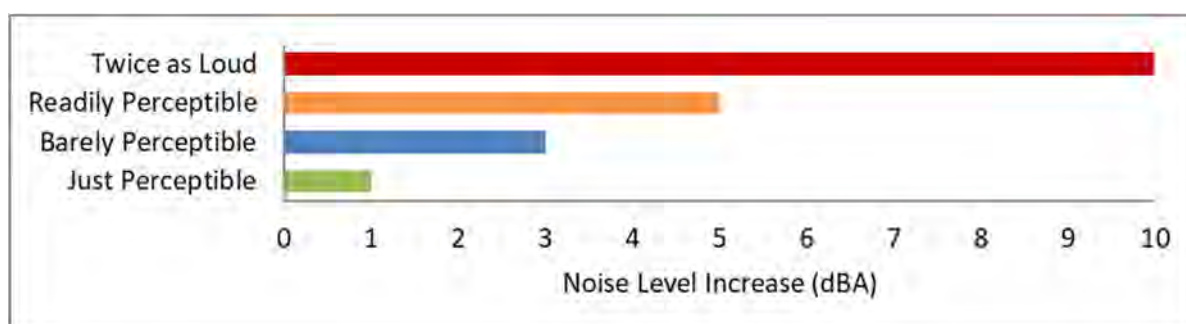
Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development,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

2.7 COMMUNITY RESPONSE TO NOISE

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

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

EXHIBIT 2-2: NOISE LEVEL INCREASE PERCEPTION



2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*, vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations

include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

Additionally, in contrast to airborne noise, ground-borne vibration outdoors is not a common environmental problem, and annoyance from ground-borne vibration is almost exclusively an indoor phenomenon (8). Therefore, the effects of vibrations should only be evaluated at a structure, and the effects of the building structure on the vibration should be considered. Wood-frame buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. In contrast, large masonry buildings with spread footings have a low response to ground vibration (8). In general, the heavier a building is, the lower the response will be to the incident vibration energy. However, all structures reduce vibration levels due to the coupling of the building to the soil.

There are several methods used to quantify vibration levels. Peak Particle Velocity (PPV) is defined as the maximum instantaneous peak of a vibration signal and is most commonly used to evaluate the impact of vibration on buildings (9) (8). However, PPV is not always suitable for assessing human response (e.g., annoyance), as the human body does not respond instantly to vibration signals. Instead, it responds to the average amplitude, more accurately represented by the Root Mean Square (RMS) value of the vibration (8).

RMS is defined as the square root of the average of the squared signal amplitude and is commonly used to evaluate human exposure to vibration. RMS and PPV are mathematically related—RMS is typically about 70% of the PPV for certain waveforms (10) (11). However, deriving RMS from PPV requires knowing the full waveform or making assumptions (e.g., sinusoidal or steady-state signals). Without this information, converting PPV to RMS introduces uncertainty and provides limited insight, especially in cases involving transient or impact vibrations (12).

This distinction is important because human annoyance to vibration is often triggered by abrupt, intermittent events, rather than sustained energy levels. Construction-related vibrations are typically impulsive and broadband, in contrast to the continuous, tonal vibrations associated with transit systems. The FTA's RMS-based criteria were developed with train activity in mind and are not well-suited for construction vibration, where perception is driven by factors like suddenness, impact, and repetition (8).

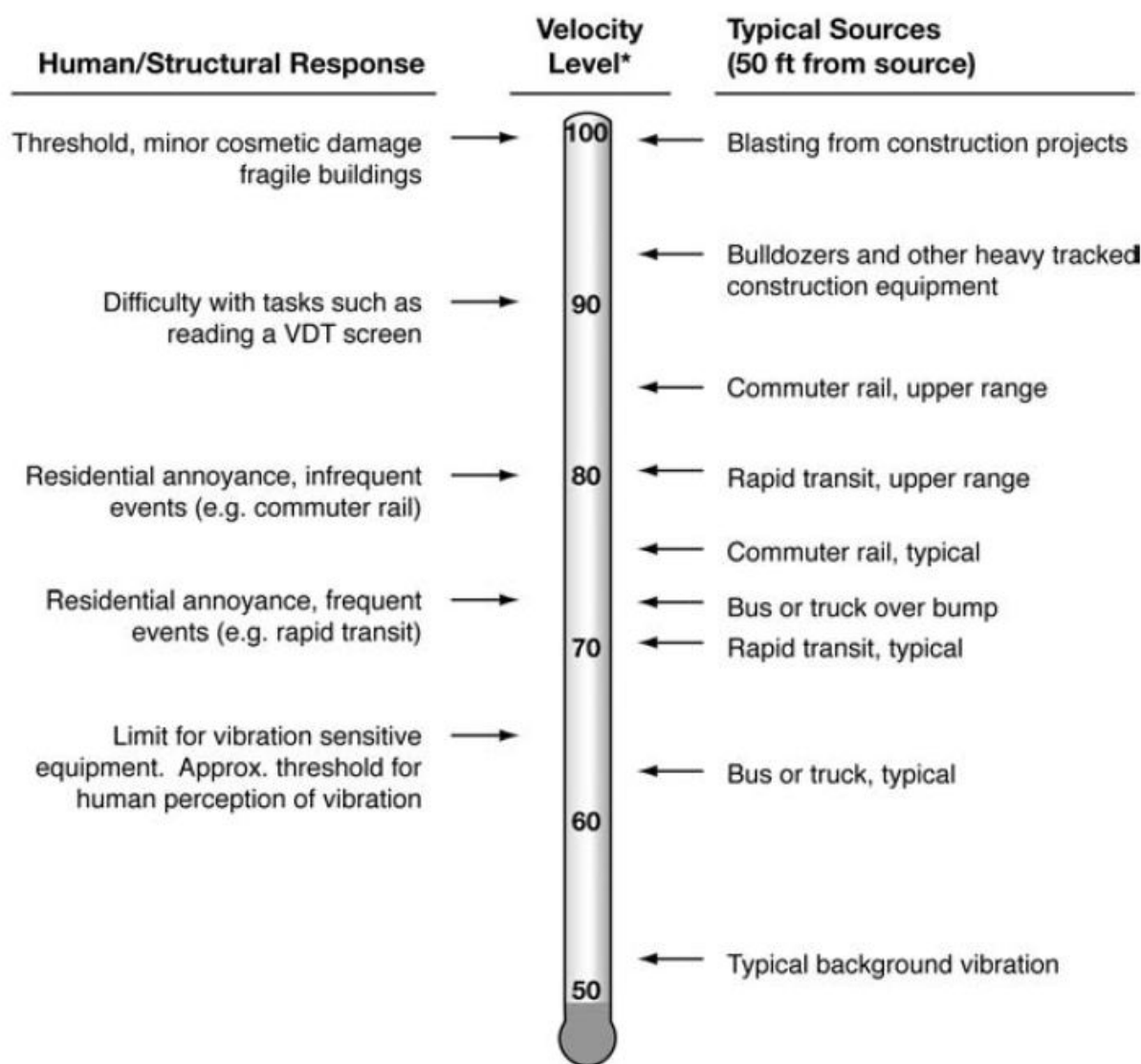
In essence, RMS tends to average out short-duration, high-intensity events—the very events that people find most disturbing. Therefore, for construction activities, PPV-based thresholds, such as those recommended by Caltrans, are more appropriate for assessing potential human annoyance and structural impact (11).

While not universally accepted, vibration decibel notation (VdB) is another RMS-based vibration notation developed and used by the FTA in their guidance manual to describe vibration levels and provide a background of common vibration levels and set vibration limits (8). Decibel notation (VdB) serves to reduce the range of numbers used to describe vibration levels and is used in this report to describe vibration levels.

As stated in the FTA guidance manual, the background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between

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

EXHIBIT 2-3: TYPICAL LEVELS OF GROUND-BORNE VIBRATION



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

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

3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research. (13) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 STATE OF CALIFORNIA BUILDING STANDARDS CODE

The State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (14) These noise standards are applied to new construction in California to control 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 a general plan or airport plan provides contours that show exterior noise levels exceed 65 dBA CNEL, such as within a noise level contour of an airport, freeway, or railroad; or if contours are unavailable, buildings exposed to a noise level of 65 dBA $L_{eq-1-hr}$ during any hour of operation; shall be constructed to provide an interior noise level environment attributable to exterior sources that does not exceed an hourly equivalent level of 50 dBA L_{eq} in occupied areas during any hour of operation.

3.3 CITY OF COACHELLA GENERAL PLAN NOISE ELEMENT

The City of Coachella has adopted a Noise Element of the General Plan as *a tool for local planners to use in achieving and maintaining land uses that are compatible with environmental noise levels*. (15) The Noise Element identifies noise goals and policies to protect City of Coachella residents from excessive noise. The goals of the Noise Element are as follows:

Goal 1 Land Use Planning and Design. A community where noise compatibility between differing types of land uses is ensured through land use planning and design strategies.

Goal 2 Stationary Source Noise. A community where excessive noise from stationary sources is minimized.

Goal 3 Mobile Source Noise. A community where excessive noise from mobile sources is minimized.

To ensure noise-sensitive land uses are protected from high levels of noise (Goal 1), Exhibit 3-1 identifies exterior noise level guidelines for new developments impacted by transportation noise sources such as arterial roads, freeways, airports, and railroads. In addition, Table 1 of the Noise Technical Appendix provides an exterior noise level standard of 65 dBA CNEL and an interior noise level standard of 45 dBA CNEL for new residential developments impacted by transportation noise. The Noise Element also requires the analysis of new developments, as necessary, to identify mitigation measures to reduce noise levels to those found in Exhibit 3-1.

The noise criteria identified in the City of Coachella Noise Element are guidelines to evaluate the land use compatibility of transportation-related noise. The compatibility criteria, shown on Exhibit 3-A, provide the City with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels.

Exhibit 3-A provides guidelines to evaluate the acceptability of the transportation-related noise level impacts. These guidelines are based on the Governor's Office of Planning and Research and are used to assess the long-term traffic noise impacts on land uses. According to the land use compatibility guidelines of the General Plan, the utility/institutional land use of the Project is considered *clearly compatible* with exterior noise levels approaching 70 dBA CNEL. For comparison, noise-sensitive residential land uses are considered *clearly compatible* with exterior noise levels of 60 dBA CNEL. (15)

3.3 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property, such as the Project, operational source noise is typically evaluated against standards established under a City's Municipal Code. For noise-sensitive residential properties, the City of Coachella Municipal Code, Section 7.04.030 (A), identifies exterior operational noise level limits for the daytime (6:00 a.m. to 10:00 p.m.) hours of 55 dBA Leq and 45 dBA Leq during the nighttime (10:00 p.m. to 6:00 a.m.) hours. The City of Coachella Municipal Code noise level standards are shown in Table 3-1 and provided in Appendix 3.1.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

Jurisdiction	Land Use	Time Period	Exterior Noise Level Standards (dBA Leq) ²
Coachella ¹	Residential	Daytime (6:00 a.m. to 10:00 p.m.)	55
		Nighttime (10:00 p.m. to 6:00 a.m.)	45

¹ Source: City of Coachella Municipal Code, Section 7.04.030 (A).

² Leq represents a steady state sound level containing the same total energy as a time-varying signal over a given sample period.

EXHIBIT 3-1: LAND USE/NOISE COMPATIBILITY MATRIX

LAND USE CATEGORIES		CNEL					
CATEGORIES	USES	55	60	65	70	75	80
RESIDENTIAL	Single Family, Duplex, Multiple Family	Green	Green	Yellow	Yellow	Orange	Red
RESIDENTIAL	Mobile Homes	Green	Green	Yellow	Orange	Orange	Red
COMMERCIAL - Regional, District	Hotel, Motel, Transient Lodging	Green	Green	Yellow	Yellow	Orange	Red
COMMERCIAL - Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	Green	Green	Green	Yellow	Yellow	Orange
COMMERCIAL INDUSTRIAL	Office Building, Research and Development, Professional Offices, City Office Building	Green	Green	Green	Yellow	Orange	Red
COMMERCIAL - Recreation INSTITUTIONAL - Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	Yellow	Yellow	Orange	Orange	Red	Red
COMMERCIAL - Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	Green	Green	Green	Yellow	Orange	Red
COMMERCIAL - General, Special INDUSTRIAL, INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	Green	Green	Green	Yellow	Yellow	Orange
INSTITUTIONAL - General	Hospital, Church, Library, School Classroom	Green	Green	Yellow	Orange	Orange	Red
OPEN SPACE	Parks	Green	Green	Green	Yellow	Orange	Red
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	Green	Green	Green	Green	Yellow	Orange
AGRICULTURE	Agriculture	Green	Green	Green	Green	Green	Green

INTERPRETATION

ZONE A (GREEN)
CLEARLY COMPATIBLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.

ZONE B (YELLOW)
NORMALLY COMPATIBLE

New construction or development should be undertaken only after an analysis of the noise reduction requirements is made and needed noise insulation features included in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning will normally suffice.

ZONE C (ORANGE)
NORMALLY INCOMPATIBLE

New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

ZONE D (RED)
CLEARLY INCOMPATIBLE

New construction or development should generally not be undertaken.

* Construction of new residential uses will not be allowed within the 65 dBA CNEL contour for airport noise.

Source: City of Coachella General Plan Noise Element, Figure 10-1.

3.4 CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the Project, the City has established limits to the hours of operation. Section 7.04.070 of the City's Municipal Code, provided in Appendix 3.1, indicates that construction activities shall be limited from October 1st through April 30th, Monday to Friday, between the hours of 6:00 a.m. and 5:30 p.m., and between 8:00 a.m. and 5:00 p.m. on Saturdays, Sundays, and holidays. From May 1st through September 30th, construction is limited to between 5:00 a.m. and 7:00 p.m. Monday to Friday, and between 8:00 a.m. and 5:00 p.m. on

Saturdays, Sundays, and holidays. (16) However, neither the City of Coachella Neither the General Plan nor the Municipal Code establishes numeric maximum acceptable construction source noise levels at potentially affected receivers. Therefore, a numerical construction threshold based on the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* is used for analysis of daytime construction impacts, as discussed below.

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise-sensitive residential land use (17 p. 179).

3.5 CONSTRUCTION VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures, and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment, such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration (17).

To analyze vibration impacts associated with the Project, vibration-generating activities are appropriately evaluated against standards established under a City's Municipal Code if such standards exist. The City of Coachella does not identify specific construction vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (11 p. 38) Table 19, vibration damage is used in this noise study to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise-sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.30 PPV (in/sec).

3.6 AIRCRAFT NOISE

The County of Riverside is responsible for the management and development of the Airport Land Use Compatibility Plan (ALUCP) for each public use and military airport in Riverside County. Each ALUCP identifies land use and noise level compatibility due to operations at airports, as well as forecasted noise level contours based on future operations at each airport. These noise level contours and land use compatibility noise levels are used in determining whether a proposed land use is consistent with forecasted noise levels. The ALUCP for the Project site is the Jacqueline Cochran Regional Airport (JCRA) ALUCP. Exhibits 3-2 and 3-3 present the JCRA Compatibility Zones and the JCRA Compatibility Criteria, respectively. The Project is located beyond Zone E as shown on Exhibit 3-2

EXHIBIT 3-2: JCRA COMPATIBILITY ZONES

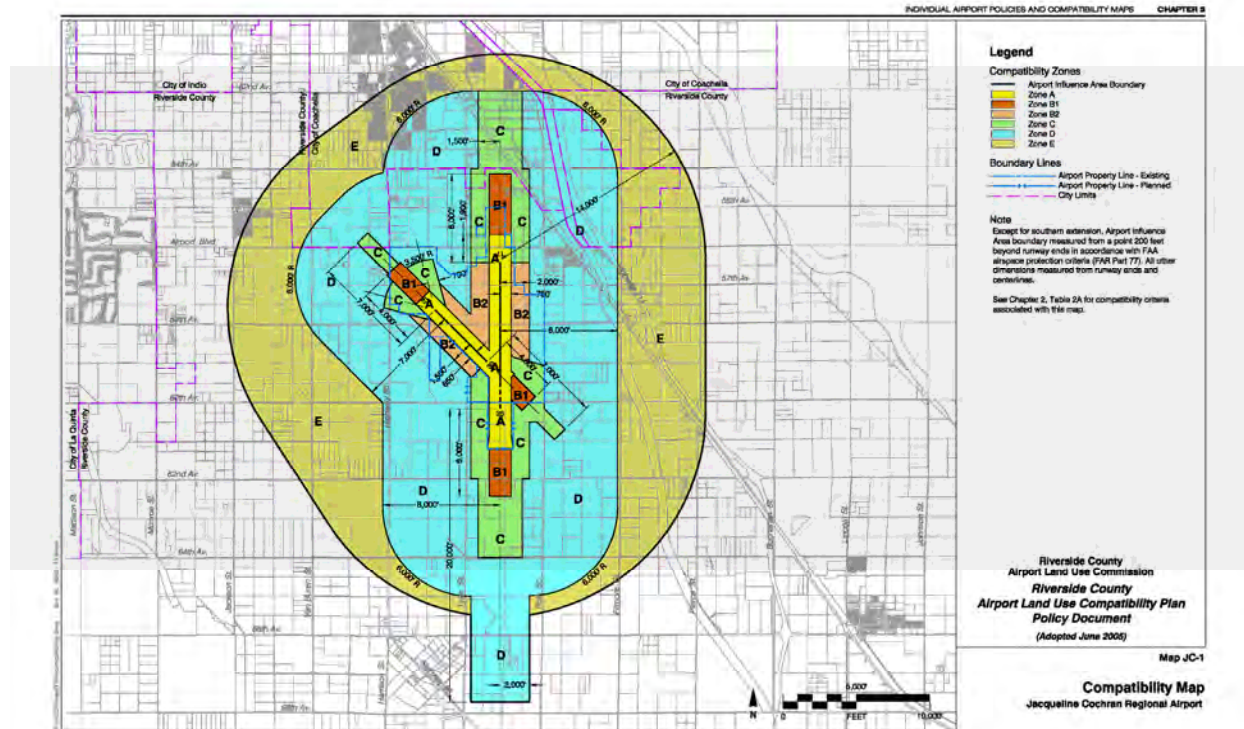


EXHIBIT 3-3: JCRA COMPATIBILITY CRITERIA

CITY OF COACHELLA: GENERAL PLAN (1998), AND ZONING CODES	
Residential Land Use ► <i>Compatibility Zone D</i> › Residential land use designations with densities ranging from 5.1 to 8.0 dwelling units per acre north of the airport [C1] potentially conflict with the high- and- low options for <i>Zone D</i> ► <i>Compatibility Zone E</i> › No inconsistencies noted	Non-Residential Land Use ► <i>Compatibility Zone C</i> › Potential Conflict: <i>Zone C</i> intensity limits (75 people/acre) apply to area designated as Light Industrial/Warehousing north of airport [C2] ► <i>Compatibility Zone D</i> › Potential Conflict: <i>Zone D</i> intensity limits (100 people/acre) apply to areas designated as Light Industrial/Warehousing and Low-Intensity Commercial/Office northwest and northeast of airport [C3] ► <i>Compatibility Zone E</i> › No inconsistencies noted
Other Policies ► <i>General Plan</i> › The Circulation Element "encourages implementation of the <i>Thermal Airport Master Plan</i> as it relates to safety, land use, and noise." › No acknowledgment of ALUC coordination › The General Plan should be amended to incorporate the current <i>ALUC Compatibility Plan</i> with respect to Jacqueline Cochran Regional Airport › Noise policy conditionally allows residential development up to 70 dB CNEL conflicts with <i>Compatibility Plan</i> limit of 60 dB CNEL ► <i>Zoning Codes</i> › Airport height limit zoning not established	
<i>Note: This is an initial land use consistency review prepared for the purpose of identifying areas where a conflict exists or potentially exists with ALUC compatibility zone criteria. This review is based upon available general plan documents and does not take into account existing land use. When a conflict between the general plan and compatibility criteria exists, it is not deemed inconsistent when the general plan is merely representing existing development. A more comprehensive analysis is necessary at the time a general plan land modification is presented to the ALUC for review.</i>	

Exhibit JC-10, continued

4 SIGNIFICANCE CRITERIA

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

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

4.1 NOISE LEVEL INCREASES (THRESHOLD A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of 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. (18) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called ambient environment.

4.1.1 Noise Sensitive Receivers (Substantial Permanent Noise Level Increase)

The Federal Interagency Committee on Noise (FICON) (19) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L_{eq}). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will typically be judged.

As previously stated, the approach used in this noise study recognizes that there is no single noise increase that renders a noise impact significant, based on a 2008 California Court of Appeal ruling on *Gray v. County of Madera*. (18) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, a readily perceptible 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA barely perceptible noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise

louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance.

The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or readily perceptible, 3 dBA or barely perceptible, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (20 p. 2_48).

4.1.2 Non-Transportation Noise (Substantial Permanent Noise Level Increase)

The FICON criteria are also used to determine if Project-related stationary source (operational) noise level increases are significant at off-site receiver locations. For non-transportation noise source activities, a substantial permanent noise level increase consists of increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA, depending on the underlying ambient noise levels.

4.1.3 Construction Noise (Substantial Temporary Noise Level Increase)

To control the noise-generating construction activities, the temporary noise level increases over the existing ambient conditions must be considered under CEQA Significance Threshold A. Although noise ordinances vary across jurisdictions, many cities and counties in California, including Los Angeles, San Diego, and San Francisco, set construction noise limits between 75 and 80 dBA L_{eq} and typically restrict construction activities to the daytime hours. In contrast, everyday noise regulations are more stringent because they apply to continuous, long-term noise sources that can significantly impact the quality of life. As a result, many jurisdictions establish daytime residential noise limits around 55 dBA L_{eq} . This suggests that a reasonable 20 dBA increase over the daytime noise limit can be tolerated without significant adverse effects. This is also illustrated in the adoption of many CEQA documents statewide that use an 80 dBA L_{eq} limit for assessing construction impacts while using everyday noise level limits of local noise ordinances in assessing on-site operational impacts.

Therefore, if the Project-related construction noise levels generate a temporary noise level increase over the existing daytime ambient noise levels more than 20 dBA L_{eq} then the Project construction noise increases will be considered a *significant* impact.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.4, the vibration impacts originating from the construction of the Project, vibration-generating activities are appropriately evaluated using standards established by the Caltrans *Transportation and Construction Vibration Guidance Manual*, Table 19. The Caltrans' vibration thresholds for building damage are used in this noise study to assess potential operational and temporary construction-related impacts at adjacent building locations. A maximum acceptable continuous vibration threshold of 0.30 PPV (in/sec) is used to describe the nearest residential buildings adjacent to the Project site.

4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

CEQA Noise Threshold C applies when there are nearby public and private airports and/or airstrips and focuses on land use compatibility of the Project to nearby airports and airstrips. The closest major airport is the San Gabriel Valley Airport (SGVA), located 1.5 miles northeast of the Project site. As shown in section 3, the Project site is beyond the 65 dBA CNEL noise level contour and would not be exposed to excessive noise levels from airport operations. Therefore, impacts are considered less than significant, and no further noise analysis is conducted in relation to Appendix G to the CEQA Guidelines, Noise Threshold C.

4.4 SIGNIFICANCE CRITERIA SUMMARY

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

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site Traffic	Noise-Sensitive ¹	If ambient is < 60 dBA CNEL If ambient is 60 - 65 dBA CNEL If ambient is > 65 dBA CNEL	≥ 5 dBA CNEL Project increase ≥ 3 dBA CNEL Project increase ≥ 1.5 dBA CNEL Project increase	
Off-Site Traffic	Non-Noise-Sensitive ²	If ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase	
On-Site	Noise Sensitive	Exterior Noise Level Criteria Interior Noise Level Standard ³	See Exhibit 3-1 45 dBA CNEL	
Operational	Noise-Sensitive	Residential Exterior Noise Level ⁴ If ambient is < 60 dBA Leq ¹ If ambient is 60 - 65 dBA Leq ¹ If ambient is > 65 dBA Leq ¹	55 dBA Leq ≥ 5 dBA Leq Project increase ≥ 3 dBA Leq Project increase ≥ 1.5 dBA Leq Project increase	45 dBA Leq
Construction	Noise-Sensitive	Noise Level Threshold ⁵ Exterior Noise Level Increase ⁶ Vibration Level Threshold ⁷	80 dBA Leq 20 dBA Leq 0.30 PPV (in/sec)	

¹ FICON, 1992.

² Figure 10- 1 of the City of Coachella General Plan Noise Element

³ California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2

⁴ City of Coachella Municipal Code section 7.04.030(A).

⁵ Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

⁶ Caltrans Traffic Noise Analysis Protocol, April 2020.

⁷ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19

"Daytime" = 6:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 6:00 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 5-1 provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, long-term noise level measurements were collected by Urban Crossroads, Inc. on Friday, July 25, 2025. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

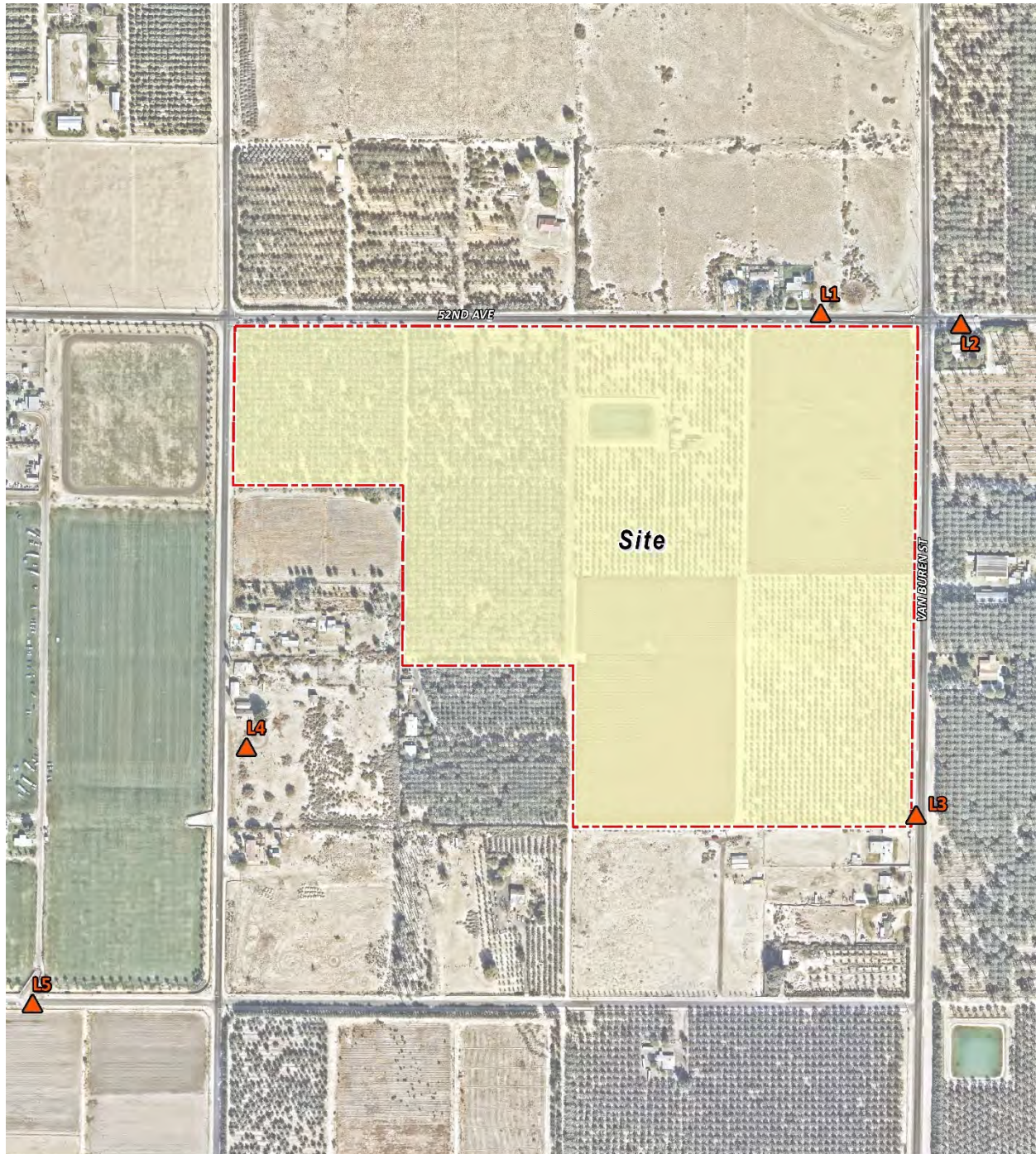
To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (21)

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

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

EXHIBIT 5-1: NOISE MEASUREMENT LOCATIONS



LEGEND:

 Site Boundary ▲ Measurement Locations

Collecting 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 increase due to the Project's contribution to ambient noise levels. This approach is necessary to calculate the temporary or permanent increase in ambient noise levels as required by the CEQA Guidelines Environmental Checklist.

5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the equivalent or the hourly energy average sound levels (Leq) to describe the existing ambient conditions. Table 5-1 provides the (energy average) noise levels used to describe 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. The equivalent sound level (Leq) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. The daytime and nighttime equivalent noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number.

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

Location ¹	Description	Energy Average Noise Level (dBA Leq) ²	
		Daytime	Nighttime
L1	Located north of the site near the residence at 83876 52nd Ave.	66.2	60.5
L2	Located east of the site near the residence at 84045 52nd Ave.	67.5	61.8
L3	Located south of the site near the residence at 52815 Van Buren St.	66.4	59.1
L4	Located south of the site near the residence at 52480 Calhoun St.	56.4	49.2
L5	Located west of the site near the residence at 83465 52nd Ave.	61.4	52.5

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

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

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

Table 5-1 provides the equivalent noise levels used to describe the daytime and nighttime ambient conditions for each of the measurements. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L1, L2, L5, L8, L25, L50, L90, L95, and L99 percentile noise levels observed during the daytime and nighttime periods.

6 OFF-SITE TRANSPORTATION NOISE ANALYSIS

The Project is anticipated to generate a maximum of 2,144 weekday trips per day. The Project would access Calhoun Street, Van Buren Street, and Avenue 52. Approximately 30 percent of the traffic is expected on Van Buren Street and Avenue 52, with the remaining 40 percent using Calhoun Street. Based on the City of Coachella traffic counts on these roads: Calhoun Street has an average daily traffic (ADT) volume of 3,893, Van Buren Street has an ADT volume of 3,799, and Avenue 52 has an ADT volume of 8,316. To generate a 3 dBA increase in traffic noise would generally require a substantial increase in truck traffic relative to the overall mix of vehicles, or a doubling of traffic volumes. The Project would not result in the generation of substantial truck trips, and the increase in daily traffic volumes is not expected to generate a perceptible noise level increase (i.e., less than 3 dBA CNEL) at sensitive land uses along affected roadways. Therefore, due to the low traffic volumes generated by the Project, the off-site traffic noise levels generated by the Project are considered *less than significant*.

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7 RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following receiver locations, as shown in Exhibit 7-1, were identified as representative locations for analysis. 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. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, outpatient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, five receiver locations in the vicinity of the Project site were identified. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the Project boundary to each receiver location.

- R1: Location R1 represents the existing residence at 83890 52nd Avenue, approximately 104 feet north of the Project site. Receiver R1 is placed at the building façade facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing residence at 84045 52nd Avenue, approximately 130 feet east of the Project site. Receiver R2 is placed in the private outdoor living area (backyard) facing the Project site.. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing residence at 52815 Van Buren Street, approximately 59 feet south of the Project site. Receiver R3 is placed in the private outdoor living area (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing residence, approximately 56 feet southwest of the Project site. Receiver R4 is placed at the building façade facing the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R5: Location R6 represents the existing residence at 53465 52nd Avenue, approximately 834 feet west of the Project site. Receiver R6 is placed at the building façade facing the Project site. A 24-hour noise measurement was taken near this location, L6, to describe the existing ambient noise environment.

EXHIBIT 7-1: RECEIVER LOCATIONS



LEGEND:

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

8 OPERATIONAL NOISE ANALYSIS

This section analyzes the potential operational noise impacts at the nearby receiver locations, identified in Section 7, resulting from the Project's operation. Exhibit 8-1 identifies the noise source locations used to assess the equivalent L_{eq} operational noise levels

8.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical residential activities at the Project site. The operational noise sources of concern would be the ground mounted air conditioning units associated with each dwelling unit are evaluated against standards established in the City of Coachella Municipal Code, Section 7.04.070, and the relative increase in noise levels at each existing sensitive receiver.

8.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities or equipment to represent the noise levels expected with the development of the Project. This section provides a detailed description of the reference noise level measurements shown in Table 8-1 used to estimate the Project operational noise impacts.

8.2.1 Air Conditioning Units

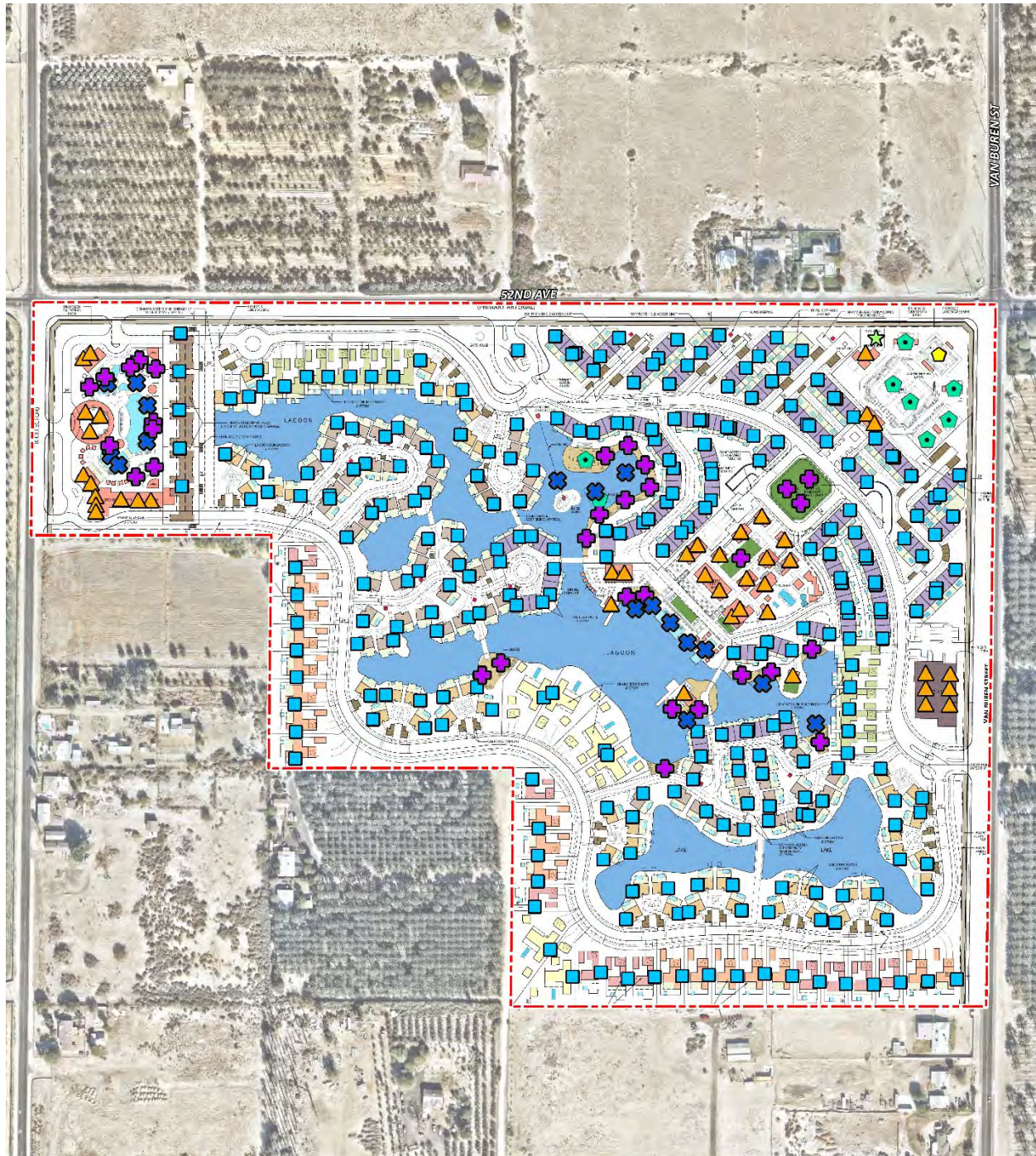
Individual Units

To assess the noise levels created by the air conditioning units, reference noise levels were taken from equipment specifications for a 2- to 5-ton residential packaged air conditioning unit (Carrier 50VR-A). The manufacturer's specifications are included in Appendix 8.1. At a uniform reference distance of 50 feet, the units would generate a reference noise level of 44.4 dBA L_{eq} . The air conditioning units were modeled 3 feet above the ground level, operating 45 minutes per hour during the daytime and nighttime, which represents the typical maximum operating time for properly sized AC systems.

Commercial Units

The noise level measurements describe a single mechanical rooftop air conditioning unit. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. At the uniform reference distance of 50 feet, the reference noise level is 59.2 dBA L_{eq} . The air conditioning units were modeled 5 feet above the ground level, operating 45 minutes per hour during the daytime and nighttime, which represents the typical maximum operating time for properly sized AC systems.

EXHIBIT 8-1: OPERATIONAL NOISE SOURCE LOCATIONS



LEGEND:



- | | | | |
|--|--|---|--|
| Site Boundary | ▲ Commercial Air Conditioning Unit | ✱ Outdoor Activity Area | ✱ Pool Activity |
| ■ Air Conditioning Unit | ■ Basketball Court | ★ Kids Play Area | ◆ Sports Activity |

TABLE 10-1: REFERENCE NOISE LEVEL MEASUREMENTS

Reference Noise Source	Noise Source Height (Feet)	Min./Hour ¹		Reference Noise Level (dBA L _{eq}) @ 50 Feet	Sound Power Level (dBA) ²
		Day	Night		
Residential Air Conditioning Units	3'	45	30	44.4	76.0
Commercial Air Conditioning Unit	5'	45	30	57.3	88.9
Basketball/Volleyball Activities	5'	60	0	52.1	83.7
Outdoor Activity Area	6'	60	0	59.9	91.5
Children's Play Area	5'	60	0	57.8	89.4
Pool/Spa Activities	5'	60	0	63.0	94.6
Pickleball Court Activities	5'	60	0	64.8	96.4
Tennis Court Activities	5'	60	0	55.4	87.0

¹ Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site.

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

² Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

8.2.2 Basketball/Volleyball Activity

To describe the noise levels associated with tennis court activities, Urban Crossroads collected a reference noise level measurement. The measured reference noise level at the uniform 50-foot reference distance is 52.1 dBA L₅₀ for basketball and volleyball court activity. The basketball and volleyball court activity noise levels include eight people playing basketball, the sound of the ball hitting the ground, gates closing, and background park noise sources including people talking. Noise associated with basketball and volleyball court activities is expected to occur for the entire hour (60 minutes).

8.2.3 Outdoor Activity

To describe the outdoor common area, courtyards, and activity areas, a reference noise level was found by modeling an outdoor event with 500 people present, averaging 66 dBA L_{eq} over the outdoor area. At 50 feet, the reference noise level is 59.9 dBA L_{eq} at a noise source height of 5 feet. The reference noise level measurement includes music and speaking. Outdoor common area activities are limited to daytime hours only.

8.2.4 Children's Play Area Activity

To describe the noise levels associated with children's play area activities, Urban Crossroads collected a reference noise level measurement. The measured reference noise level at the uniform 50-foot reference distance is 57.8 dBA L₅₀ for children's play area activity. The children's play area activity noise levels include children playing on swing sets and play structures with background park noise sources, such as parents talking on phones and with other parents. Noise associated with children's play area activities is expected to occur for the entire hour (60 minutes).

8.2.5 Pool/Spa Activity

To describe the noise levels associated with pool and spa activities, Urban Crossroads collected a reference noise level measurement. The measured reference noise level at the uniform 50-foot reference distance is 63.0 dBA L_{50} for pool and spa activity. The pool activity noise levels include kids playing, running, screaming, splashing, playing with a ball, and parents talking. Noise associated with pool and spa activities is expected to occur for the entire hour (60 minutes).

8.2.6 Pickleball Court Activity

To describe the noise levels associated with pickleball court activities, Urban Crossroads collected a reference noise level measurement. The measured reference noise level at the uniform 50-foot reference distance is 64.8 dBA L_{50} for pickleball court activity. Pickleball court activity noise levels include the constant talk of the players, the “pop” sound of rackets hitting pickle balls, metal gates closing, and background park noise sources, including people talking. Noise associated with pickleball court activities is expected to occur for the entire hour (60 minutes).

8.2.7 Tennis Court Activity

To describe the noise levels associated with tennis court activities, Urban Crossroads collected a reference noise level measurement. The measured reference noise level at the uniform 50-foot reference distance is 49.6 dBA L_{50} for tennis court activity. The tennis court activity noise levels include an instructor and student playing tennis, the instructor giving constant verbal feedback, the sound of rackets hitting tennis balls, metal tennis court gates closing, and background park noise sources, including people talking. Noise associated with tennis court activities is expected to occur for the entire hour (60 minutes).

8.3 CADNA 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 the 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 8.2 includes the detailed noise dBA L_{eq} model inputs used to estimate the Project operational noise levels presented in this section.

8.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the Project operations that include ground mounted air conditioning units, 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 8-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 44.4 to 49.9 dBA L_{eq} .

TABLE 10-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Operational Noise Levels by Receiver Location (dBA L_{eq})				
	R1	R2	R3	R4	R5
Residential Air Conditioning Units	44.5	42.4	41.8	41.7	38.4
Commercial Air Conditioning Unit	35.1	38.8	20.9	19.2	15.0
Basketball/Volleyball Activities	43.9	41.8	40.4	42.9	39.7
Outdoor Activity Area	41.0	34.4	21.0	20.1	16.0
Children's Play Area	42.9	41.2	40.9	43.1	40.5
Pool/Spa Activities	39.6	43.5	29.6	27.2	22.5
Total (All Noise Sources)	49.9	48.9	46.0	47.4	44.4

¹ See Exhibit 8-1 for the noise source locations. CadnaA noise model calculations are included in Appendix 8.2.

Table 8-3 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the existing off-site receiver locations are expected to range from 16.5 to 39.2 dBA L_{eq} . The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity, as outlined in Table 8-1. Appendix 8.2 includes the detailed noise model inputs.

TABLE 10-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Operational Noise Levels by Receiver Location (dBA L_{eq})				
	R1	R2	R3	R4	R5
Residential Air Conditioning Units	43.6	41.4	40.8	40.7	37.5
Commercial Air Conditioning Unit	0.0	0.0	0.0	0.0	0.0
Basketball/Volleyball Activities	0.0	0.0	0.0	0.0	0.0
Outdoor Activity Area	0.0	0.0	0.0	0.0	0.0
Children's Play Area	0.0	0.0	0.0	0.0	0.0
Pool/Spa Activities	0.0	0.0	0.0	0.0	0.0
Total (All Noise Sources)	43.6	41.4	40.8	40.7	37.5

¹ See Exhibit 8-1 for the noise source locations. CadnaA noise model calculations are included in Appendix 8.2.

8.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the unmitigated Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Coachella exterior noise level standards at nearby receiver locations. Table 8-4 shows that the mitigated operational noise levels associated with the Project will not exceed the City of Coachella daytime and nighttime exterior noise level standards at the existing nearby noise-sensitive receiver locations. Therefore, the mitigated operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

TABLE 8-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location ¹	Project Operational Noise Levels (dBA Leq) ²		Noise Level Standards (dBA Leq) ³		Noise Level Standards Exceeded? ⁴	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	49.9	43.6	50.0	45.0	No	No
R2	48.9	41.4	50.0	45.0	No	No
R3	46.0	40.8	50.0	45.0	No	No
R4	47.4	40.7	50.0	45.0	No	No
R5	44.4	37.5	50.0	45.0	No	No

¹ See Exhibit 7-1 for the receiver locations.

² Proposed Project unmitigated operational noise levels as shown on Tables 8-2 and 8-3.

³ Exterior noise level standards, as shown in Table 4-1.

⁴ Do the estimated Project operational noise source activities exceed the noise level standards?

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

8.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

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

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

where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases over the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented in Tables 8-5 and 8-6, respectively. As indicated in Table 8-5, the Project will generate daytime operational noise increases ranging from 0.0 to 0.7 dBA L_{eq} at the nearest receiver locations. Table 8-6 shows that the Project will generate nighttime operational noise level increases ranging from 0.0 to 2.4 dBA L_{eq} at the nearest receiver locations. Project-related operational noise level increases would not exceed the operational noise level increase significance criteria presented in Table 4-1. Therefore, Project-

related operational noise level increases at the sensitive receiver locations will be *less than significant*.

TABLE 8-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	49.9	L1	66.2	66.3	0.1	1.5	No
R2	48.9	L2	67.5	67.6	0.1	1.5	No
R3	46.0	L3	66.4	66.4	0.0	1.5	No
R4	47.4	L4	56.4	56.9	0.5	5.0	No
R5	44.4	L5	61.4	61.5	0.1	5.0	No

¹ See Exhibit 7-1 for the receiver locations.

² Total Project daytime operational noise levels as shown in Table 8-2.

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

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

TABLE 8-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	43.6	L1	60.5	60.6	0.1	5.0	No
R2	41.4	L2	61.8	61.8	0.0	5.0	No
R3	40.8	L3	59.1	59.2	0.1	5.0	No
R4	40.7	L4	49.2	49.8	0.6	5.0	No
R5	37.5	L5	52.5	52.6	0.1	5.0	No

¹ See Exhibit 7-1 for the receiver locations.

² Total Project nighttime operational noise levels as shown in Table 8-3.

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

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

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9 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 9-1 shows the on-site construction noise source activity in relation to the nearest sensitive receiver locations previously described in Section 7. According to Section 7.04.070 of the Municipal Code, between October 1st and April 30th, construction, erection, demolition, alteration, repair, addition to or improvement of any building, structure, road, or improvement to realty is prohibited Monday through Friday, 6:00 a.m. to 5:30 p.m., Saturday, 8:00 a.m. to 5:00 p.m., Sunday, 8:00 a.m. to 5:00 p.m., and on Holidays, 8:00 a.m. to 5:00 p.m. Also, construction, erection, demolition, alteration, repair, addition to or improvement of any building, structure, road, or improvement to realty is prohibited between May 1st and September 30th, Monday through Friday: 5:00 a.m. to 7:00 p.m., Saturday: 8:00 a.m. to 5:00 p.m., Sunday: 8:00 a.m. to 5:00 p.m., and Holidays: 8:00 a.m. to 5:00 p.m. (22)

9.1 CONSTRUCTION NOISE LEVELS

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

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

9.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (23) The RCNM equipment database provides a comprehensive list of the noise-generating characteristics of specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation. According to the EPA, FTA, and FHWA, the overall construction noise level is governed primarily by the noisiest pieces of equipment. The quieter pieces do not affect the overall level, but they do reduce the magnitude of the fluctuations in the noise level. Therefore, a rough estimate of the noise level need only include the noisiest pieces of equipment expected at the site. (24) (8) (25) Consistent with FHWA and FTA guidance for detailed construction noise assessment, Table 9-1 presents the combined noise levels for the loudest construction activities expected for each stage, assuming all equipment operates simultaneously.

EXHIBIT 9-1: CONSTRUCTION NOISE SOURCE LOCATIONS



LEGEND:

 Construction Activity
  Receiver Locations
 —●— Distance from receiver to construction activity (in feet)

TABLE 9-1: CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Equipmnet ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})	Composite Reference Noise Level (dBA L _{eq})	Reference Power Level (dBA L _w)
Site Preparation	Tractor	80.0	82.9	114.5
	Front End Loader	75.0		
	Dozer	78.0		
Grading	Tractor	80.0	84.2	115.9
	Grader	81.0		
	Compactor (ground)	76.0		
Building Construction	Crane	73.0	82.1	113.7
	Generator	78.0		
	Gradall	79.0		
Paving	Paver	74.0	77.8	109.5
	Dump Truck	72.0		
	Roller	73.0		
Architectural Coating	Man Lift	68.0	76.2	107.8
	Compressor (air)	74.0		
	Generator (<25kVA)	70.0		

¹ FHWA Road Construction Noise Model.

9.3 CONSTRUCTION NOISE ANALYSIS

Construction projects involve various stages, and activities frequently shift from one location to another. For example, during site preparation and grading, noise-generating activities may concentrate in an area for a short period to remove an obstruction, while the majority of the grading involves the equipment moving back and forth in a predictable pattern throughout the site; building construction and foundation work generally concentrate near the building footprint, while paving generally involves a predictable pattern of movement throughout the site. Therefore, construction activities are best evaluated as multiple moving point sources within the construction area since the speed and power of the equipment vary, and the equipment constantly changes position in terms of its distance and direction relative to the receivers. (8) (26) Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts by phase at the nearby sensitive receiver locations were completed. To account for the dynamic nature of construction activities, the CadnaA construction noise analysis evaluates the noise source activities as multiple moving point sources, or construction crews, within the limits of construction. Construction impacts are based on the loudest activity and the highest noise level calculated at each receiver location. As shown in Table 9-2, the highest construction noise levels are expected to range from 54.6 to 63.6 dBA L_{eq} at the nearby receiver locations. Appendix 9.1 includes the detailed CadnaA construction noise model inputs.

TABLE 9-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location ¹						
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²
R1	61.9	63.2	61.1	56.8	55.1	63.2
R2	60.2	61.5	59.4	55.1	53.4	61.5
R3	62.3	63.6	61.5	57.2	55.5	63.6
R4	62.0	63.3	61.2	56.9	55.2	63.3
R5	53.3	54.6	52.5	48.2	46.5	54.6

¹ Construction noise source and receiver locations are shown in Exhibit 9-1.

² Construction noise level calculations based on distance from the project site boundaries (construction activity area) to nearby receiver locations. CadnaA construction noise model inputs are included in Appendix 9.1.

9.4 PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at the nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will not exceed the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities at any receiver shown in Exhibit 7-1. Therefore, the noise impacts due to Project construction noise are considered *less than significant*.

TABLE 9-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location ¹	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴
R1	55.1	80	No
R2	53.4	80	No
R3	55.5	80	No
R4	55.2	80	No
R5	46.5	80	No

¹ Construction noise source and receiver locations are shown in Exhibit 9-1.

² Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations, as shown in Table 9-2.

³ Construction noise level thresholds as shown in Table 4-1.

⁴ Do the estimated Project construction noise levels exceed the construction noise level threshold?

9.5 TEMPORARY CONSTRUCTION NOISE LEVEL INCREASES

To describe the temporary Project construction noise level contributions to the existing ambient noise environment, the Project construction noise levels were combined with the existing ambient noise level measurements at the nearest off-site receiver locations. The difference between the combined Project-construction and ambient noise levels is used to describe the construction noise level contributions. Temporary noise level increases that would be experienced at sensitive receiver

locations when Project construction-source noise is added to the ambient daytime conditions are presented in Table 9-4. A temporary noise level increase of 20 dBA is considered a *significant* impact based on the substantial noise level increase criteria, which is used to assess the Project-construction noise level increases.

As indicated in Table 9-4, the Project construction will contribute to noise level increases ranging from 0.1 to 2.5 dBA L_{eq} during the daytime hours at the nearest receiver locations. The unmitigated construction noise analysis shows that the nearest receiver locations will not exceed the 20 dBA L_{eq} noise level increase significance threshold during Project construction activities. The temporary construction noise level increase analysis shows that the noise impacts due to the Project construction noise are considered *less than significant*.

TABLE 9-4: DAYTIME CONSTRUCTION NOISE LEVEL INCREASES

Receiver Location ¹	Typical Project Construction Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	55.1	L1	66.2	66.5	0.3	20	No
R2	53.4	L2	67.5	67.7	0.2	20	No
R3	55.5	L3	66.4	66.7	0.3	20	No
R4	55.2	L4	56.4	58.9	2.5	20	No
R5	46.5	L5	61.4	61.5	0.1	20	No

¹ Construction noise source and receiver locations are shown in Exhibit 9-1.

² Typical Project daytime construction noise levels as shown in Table 9-3.

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

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

⁵ Represents the combined ambient conditions plus the Project construction activities.

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

⁷ Caltrans Traffic Noise Analysis Protocol.

9.6 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 in Table 9-5. 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 Caltrans. To describe the vibration impacts, Caltrans provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

TABLE 9-5: 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 in Table 9-5 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 9-6 presents the expected Project-related vibration levels at the nearby receiver locations. At distances ranging from 3 to 207 feet from Project construction activities, construction vibration velocity levels are estimated to range from less than 0.01 to 5.05 PPV in/sec. Based on the maximum acceptable continuous vibration threshold of 0.30 PPV (in/sec), the typical Project construction vibration levels will not exceed the vibration thresholds at any receivers. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

It should be noted that vibration levels at the site of the closest sensitive receiver are unlikely to be sustained during the entire construction period, but will occur only during the times that heavy construction equipment is operating adjacent to the Project site perimeter. Moreover, construction at the Project site will be restricted to the daytime hours, consistent with City of Coachella requirements, eliminating potential vibration impacts during the sensitive evening and nighttime hours.

TABLE 9-6: PROJECT CONSTRUCTION VIBRATION LEVELS

Location ¹	Distance to Const. Activity (Feet) ²	Typical Construction Vibration Levels PPV (in/sec) ³						Thresholds PPV (in/sec) ⁴	Thresholds Exceeded? ⁵
		Small bulldozer	Jack- hammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level		
R1	104'	0.00	0.00	0.01	0.01	0.02	0.02	0.30	No
R2	130'	0.00	0.00	0.01	0.01	0.02	0.02	0.30	No
R3	59'	0.00	0.01	0.02	0.02	0.06	0.06	0.30	No
R4	56'	0.00	0.01	0.02	0.03	0.06	0.06	0.30	No
R5	834'	0.00	0.00	0.00	0.00	0.00	0.00	0.30	No

¹ Construction noise source and receiver locations are shown in Exhibit 9-1.

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

³ Based on the Vibration Source Levels of Construction Equipment (Table 9-5).

⁴ Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19, p. 38.

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

"PPV" = Peak Particle Velocity

12 REFERENCES

1. **Association of Environmental Professionals.** *California Environmental Quality Act Statute & Guidelines.* 2023.
2. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
3. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
4. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch.** *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* December 2011.
5. **U.S. Department of Transportation Federal Highway Administration.** *Highway Noise Barrier Design Handbook.* 2001.
6. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
7. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook- A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
8. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual, FTA Report No. 0123.* September 2018.
9. **Dowding, C. H.** *Construction Vibrations.* s.l. : Prentice Hall, 1996.
10. **DIN 4150-3.** *Structural Vibration - Effects of Vibration on Structures.* s.l. : German Institute for Standardization., 1999.
11. **California Department of Transportation.** *Transportation and Construction Vibration Guidance Manual.* April 2020.
12. **Amick, H., & Randall, M.** *Environmental Vibration—A Review of ISO and ANSI Standards and Their Application in Critical Environments.* s.l. : Proceedings of SPIE, Vol. 5933, 2005.
13. **Office of Planning and Research.** *State of California General Plan Guidelines 2003.* October 2003.
14. **State of California.** 2022 California Green Building Standards Code. [Online] 2021. [Cited: January 23, 2023.] https://codes.iccsafe.org/content/CAGBC2022P1/chapter-5-nonresidential-mandatory-measures#CAGBC2022P1_Ch05_SubCh5.5.
15. **City of Coachella.** *General Plan Noise Element.* April 2015.
16. —. *Municipal Code, Title 7 Noise Control.*
17. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
18. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.
19. **Federal Interagency Committee on Noise.** *Federal Agency Review of Selected Airport Noise Analysis Issues.* August 1992.
20. **California Department of Transportation.** *Technical Noise Supplement.* November 2009.
21. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*

22. **City of Coachella.** Municipal Code, Chapter 7.04 - Noise Control. [Online] https://library.municode.com/ca/coachella/codes/code_of_ordinances?nodeId=TIT7NOCO.
23. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning.** *FHWA Roadway Construction Noise Model*. January, 2006.
24. **U.S. Environmental Protection Agency.** *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. 1971. NTID300.1.
25. **U.S. Department of Transportation, Federal Highway Administration.** Special Report - Measurement, Prediction, and Mitigation. *Office of Planning, Environment, and Realty - Environment - Noise*. [Online] 2017. https://www.fhwa.dot.gov/environment/noise/construction_noise/special_report/hcn00.cfm.
26. —. *FHWA Highway Construction Noise Handbook*. Final Report August 2006.

13 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the 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 (619) 788-1971.

William Maddux, INCE
Senior Associate
URBAN CROSSROADS, INC.
(619) 788-1971
bmaddux@urbanxroads.com

EDUCATION

Bachelor of Science in Urban and Regional Planning
California Polytechnic State University, Pomona • June 2000

PROFESSIONAL AFFILIATIONS

ASA – Acoustical Society of America
AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
INCE – Institute of Noise Control Engineers

PROFESSIONAL CERTIFICATIONS

Approved Acoustical Consultant • County of San Diego
FHWA Traffic Noise Model of Training • November 2004
CadnaA Basic and Advanced Training Certificate • October 2008.

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APPENDIX 3.1:

CITY OF COACHELLA MUNICIPAL CODE

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Title 7 - NOISE CONTROL

Chapters:

Chapter 7.04 - NOISE CONTROL

Sections:

*Footnotes:**--- (1) ---*

Editor's note— *Ord. No. 1022, adopted Nov. 17, 2010, amended ch. 7.04 in its entirety to read as herein set out. Former ch. 7.04 pertained to similar subject matter, consisted of §§ 7.04.010—7.04.140, and derived from Ord. 940.*

7.24.010 - Purpose.

The city council finds and declares that:

- A. Inadequately controlled noise presents a growing danger to the health and welfare of the residents of the city of Coachella;
- B. The making and creation of excessive, unnecessary or unusually loud noises within the limits of the city of Coachella is a condition that has existed for some time, however, the extent and volume of such noises is increasing;
- C. The making, creation or maintenance of such excessive, unnecessary, unnatural or unusually loud noises that are prolonged, unusual and unnatural in their time, place and use affect and are a detriment to public health, comfort, convenience, safety, welfare and prosperity of the residents of the city of Coachella;
- D. Every person is entitled to an environment in which the noise is not detrimental to his life, health, or enjoyment of property; and
- E. The necessity in the public interest for the provisions and prohibitions hereinafter contained and enacted, is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions hereinafter contained and enacted are in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare and prosperity and the peace and quiet of the residents of the city of Coachella.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.020 - Definitions.

[As used in this chapter, the following terms have the meanings given:]

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

"Ambient noise level" means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

"Amplified music" means instrumental and/or vocal music amplified through electronic means.

"Average sound level" means a sound level typical of the sound levels at a certain place during a given period of time; also, means an equivalent continuous sound level.

"Commercial establishments" includes, but is not limited to, any nightclub, restaurant, sports bar, industrial, retail or business establishment or combination thereof.

"Construction equipment" means any tools, machinery or equipment used in connection with construction operations, including all types of "special construction" equipment as defined in the pertinent sections of the California Vehicle Code when used in the construction process on any construction site, home improvement site or property maintenance site, regardless of whether such site be located on-highway or off-highway.

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

"Decibel" means a unit measure of sound level noise.

"Disturbance" means any disturbance of the peace as defined by California Penal Code Section 415 or as otherwise defined herein.

"Disturbing, excessive or offensive noise" means any sound or noise from any source in excess of the sound level or noise level set forth in Section 7.04.030.

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

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

"Gathering" means any convergence of five or more persons.

"Impact noise" means the noise produced by the collision of one mass in motion with a second mass which may be either in motion or in rest.

"Noise level" means the same as "sound level." The terms may be used interchangeably herein.

"Peace officer" means a duly appointed officer of the city, as defined in California Penal Code, Sections 830, et seq.

"Person" means a person, firm, association, copartnership, joint venture, corporation or any entity, public or private in nature.

"Portable powered blower" means any mechanically powered device, regardless of the source of power, which is not stationary, and used for the purpose of blowing leaves, dirt or other debris off sidewalks, lawns or other surfaces.

"Premises" means any real property or location at which a gathering may be held.

"Sound level" (noise level) in decibels is the quantity measured using the frequency weighting of A of a sound level meter as defined herein.

"Sound level meter" means an instrument meeting American National Standard Institute's Standard SL 4-1974 for type 1 or type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.030 - Sound level limits as related to fixed noise sources.

- A. Regardless of whether an objective measurement by sound level meter is involved, it shall be unlawful for any person to make, continue, or cause to be made or continued, within the city limits any disturbing excessive or offensive noise or vibration which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area or that is plainly audible at a distance greater than fifty (50) feet from the sources point for any purpose. The following ten-minute average sound level limits, unless otherwise specifically indicated, shall apply as indicated in the following table as it relates to a fixed noise source or leaf blowers pursuant to Section 7.04.075.

Zone	Time	Applicable Ten-Minute Average Decibel Limit (A-weighted)
Residential—All zones	6:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 6:00 a.m.	45
Commercial—All zones	6:00 a.m. to 10:00 p.m.	65
	10:00 p.m. to 6:00 a.m.	55

- B. If the measured ambient noise level exceeds the applicable limit as noted in the table in subsection (A) of this section, the allowable average sound level shall be the ambient noise level. The ambient noise level shall be measured when the alleged noise violation sources are not

operating.

- C. The sound level limit between two zoning districts shall be measured at the higher allowable district.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.040 - Prohibited noise generally.

- A. It is unlawful for any person or property owner within the city of Coachella to make, cause, or continue to make or cause, loud, excessive, impulsive or intrusive sound or noise that annoys or disturbs persons of ordinary sensibilities.
- B. The factors, standards, and conditions that may be considered in determining whether a violation of the provisions of this section has been committed, include, but are not limited to, the following:
 - 1. The level of the noise;
 - 2. The level and intensity of the background (ambient) noise, if any;
 - 3. The proximity of the noise to residential or commercial sleeping areas;
 - 4. The nature, density and zoning of the area within which the noise emanates;
 - 5. The density of inhabitation of the area within which the noise emanates;
 - 6. The time of day and night the noise occurs;
 - 7. The duration of the noise;
 - 8. Whether the nature of the noise is natural or unnatural;
 - 9. Whether the noise is constant, recurrent or intermittent; and
 - 10. Whether the noise is produced by a commercial or noncommercial activity.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.050 - Disturbing, excessive, offensive noises—Declaration of certain acts constituting.

The following activities, are declared to be deemed disturbing, excessive or offensive noises and any of the following shall constitute prima facie evidence of a violation:

- A. Horns, Signaling Devices, Muffler Systems, Car Alarms, Etc. Unnecessary use or operation of horns, signaling devices, uncontrolled muffler noises, car alarms on vehicles of all types, including motorcycles, and other equipment.
 - 1. The operation of any such sound production or reproduction device, radio receiving set, musical instrument, drum, phonograph, television set, machine, loudspeaker and sound amplifier or similar machine or device in such a manner as to be plainly audible at a distance of fifty (50) feet or more from the building, structure or vehicle in which located, or from the source point.

2. The operation of any sound amplifier, which is part of, or connected to, any radio, stereo receiver, compact disc player, cassette tape player, or other similar device when operated in such a manner as to be plainly audible at a distance of fifty (50) feet from the source point or when operated in such a manner as to cause a person to be aware of vibration at a distance of fifty (50) feet or more from the source point.
- B. Uses Restricted. The use, operation, or permitting to be played, used or operated, any sound production or reproduction device, radio receiving set, musical instrument, drums, phonograph, television set, loudspeakers and sound amplifiers or other machine or device for the producing or reproducing of sound in such a manner as to disturb the peace, quiet, and comfort of any reasonable person of normal sensitiveness.
- C. Prima Facie Violations. Any of the following shall constitute evidence of a prima facie violation of this section:
1. The operation of any such sound production or reproduction device, radio receiving set, musical instrument, drum, phonograph, television set, machine, loudspeaker and sound amplifier or similar machine or device in such a manner as to be plainly audible at a distance of fifty (50) feet from the building, structure or vehicle in which located, or from the source point.
 2. The operation of any sound amplifier, which is part of, or connected to, any radio, stereo receiver, compact disc player, cassette tape player, or other similar device when operated in such a manner as to be plainly audible at a distance of fifty (50) feet from the source point or when operated in such a manner as to cause a person to be aware of vibration at a distance of fifty (50) feet from the source point.
- D. Enforcement of Prima Facie Violations. Any peace officer, as defined in California Penal Code, Sections 830, et seq., and/or the city manager or his or her designees, who are authorized to enforce the provisions of this chapter and who encounters evidence of a prima facie violation of this section whereby the component(s) amplifying or transmitting the 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 shall be empowered to issue a citation and/or to confiscate and impound as evidence, any or all of the components amplifying or transmitting the sound.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.060 - Special provisions—Exemptions.

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

- A. School bands, school athletic and school entertainment events;
- B. Outdoor gatherings, public dances, shows and sporting and entertainment events; provided, the events are authorized by the city;

- C. Activities conducted in public parks and public playgrounds;
- D. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work;
- E. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions;
- F. Mobile noise sounds associated with agricultural operations provided such operations do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturdays, or at any time on Sunday or a federal holiday;
- G. Mobile noise sources associated with agricultural pest control through pesticide application;
- H. Carillon chimes between the hours of 8:00 a.m. to 7:00 p.m.;
- I. For noise sources associated with property maintenance, refer to Section 7.04.075, "property maintenance activities";
- J. For noise sources associated with construction activities, refer to Section 7.04.070, "construction activities"; and
- K. The provisions of this regulation shall not preclude the construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public work projects or essential public services and facilities, including those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.070 - Construction activities.

No person shall perform, nor shall any person be employed, nor shall any person cause any other person to be employed to work for which a building permit is required by the city in any work of construction, erection, demolition, alteration, repair, addition to or improvement of any building, structure, road or improvement to realty except between the hours as set forth as follows:

October 1st through April 30th

Monday—Friday: 6:00 a.m. to 5:30 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

May 1st through September 30th

Monday—Friday: 5:00 a.m. to 7:00 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

Emergency work and/or unusual conditions may cause work to be permitted with the consent of the city manager, or his or her designee, upon recommendation of the building director or the city engineer.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.075 - Property maintenance activities.

- A. Noise sources associated with property maintenance activity and all portable blowers, lawnmowers, edgers or similar devices shall be prohibited except during the following hours:

October 1st through April 30th

Monday—Sunday: 9:00 a.m. to 5:30 p.m.

Holidays: Not allowed.

May 1st through September 30th

Monday—Friday: 8:00 a.m. to 5:30 p.m.

Saturday and Sunday: 9:00 a.m. to 5:30 p.m.

Holidays: Not allowed.

Notwithstanding the hours of permitted operations, such equipment that constitutes a public nuisance may be abated as otherwise provided in this Code.

- B. No person shall willfully make or continue, or willfully cause to be made or continued, any noise from any portable powered blower at a level which exceeds seventy (70) decibels dBA measured at the midpoint of a wall area twenty (20) feet long and ten (10) feet high and at the horizontal distance fifty (50) feet away from the midpoint of the wall, or not more than seventy-six (76) decibels dBA at a horizontal distance of twenty-four (24) feet using a sound level meter.
- C. No portable powered blower shall be operated in a manner which will permit dirt, dust, debris, leaves, grass clippings, cuttings, or trimmings from trees or shrubs to be blown or deposited onto neighboring property or public right-of-way. All waste shall be removed and disposed of in a sanitary manner by the use or property occupant.
- D. Leaf blowers shall not be operated within a horizontal distance of ten (10) feet of any operable window, door, or mechanical air intake opening or duct.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.080 - Schools, hospitals and churches—Special provisions.

It is unlawful for any person to create any noise which causes the noise level at any school, hospital or church while the same is in use, to exceed the noise limits, as specified in subsection (A) of Section 7.04.030, prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably disturbs or annoys patients in the hospital.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.090 - Air conditioning, refrigeration and pool equipment.

The noise standards enumerated in Section 7.04.030 shall be increased by eight dBA when the alleged offensive noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of the ordinance codified in this chapter. Installation of new equipment must be certified to be within the provisions of this chapter. Installation of new equipment must be certified to be within the provisions of this chapter for night and day operation noise level.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.100 - Noise level measurement.

- A. The location selected for measuring exterior noise levels between residential properties shall be at the property line of the affected residential property. Affected residential property shall be the address from which the complaint was received. Interior noise measurement shall be made within the affected residential unit. The measurement shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source.

The location selected for measuring exterior noise levels between nonresidential properties shall be at the property line of the affected property.

- B. The location selected for measuring exterior noise levels between two zoning districts shall be at the boundary of the two districts.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.110 - Interference with authorized personnel is prohibited.

No person shall interfere with, oppose or resist any authorized person charged with enforcement of this chapter while such person is engaged in the performance of his duty.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.120 - Pre-existing noise source—Time extension.

Those commercial and/or industrial noise sources in existence prior to the date of adoption of the ordinance codified in this chapter, which noise sources are an integral part of a building, structure or similar fixed and permanent installation if in compliance with local zoning structures, shall be granted a three-year period from the date of adoption with which to comply with the provisions of the chapter. If, at the end of the three-year period, it can be shown that compliance with the provisions herein constitutes a hardship in terms of technical and economic feasibility, the time to comply may be extended on an annual basis until such time as compliance may be affected.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.130 - Violation—Infractions.

Any person violating any of the provisions of this chapter shall be deemed guilty of an infraction.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.140 - Continuing or subsequent violations—Misdemeanor.

Any person having been convicted of a violation of any provisions of this chapter who thereafter commits a violation of the same provisions of this chapter shall be guilty of a misdemeanor.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

7.04.150 - Severability.

If any provision of this chapter is held to be unconstitutional or otherwise invalid by any court of competent jurisdiction, the remaining provisions of this chapter shall not be invalidated.

(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)

Chapter 7.05 - MULTIPLE RESPONSES TO LOUD OR UNRULY PARTIES, GATHERINGS OR OTHER SIMILAR EVENTS

7.05.010 - Declaration of findings and policy.

It is hereby found and declared that:

- A. Due to inadequate supervision, some large gatherings of people, such as parties, frequently become loud and unruly to the point that they constitute a threat to the peace, health, safety, or general welfare of the public as a result of conduct such as one or more of the following:

excessive noise, excessive traffic, obstruction of public streets or crowds who have spilled over into public streets, public drunkenness, the service of alcohol to minors, fights, disturbances of the peace, and litter.

- B. The city of Coachella is required to make multiple responses to such unruly gatherings in order to restore and maintain the peace and protect public safety. Such gatherings are a burden on scarce city resources and can result in police responses to regular and emergency calls being delayed and police protection to the rest of the city being reduced.
- C. In order to discourage the occurrence of repeated loud and unruly gatherings, the persons responsible for the public nuisance created by these gatherings should be fined.

(Ord. No. 1023, § 1, 11-17-10; Ord. No. 1025, 11-17-10)

7.05.020 - Loud or unruly gatherings—Public nuisance.

It shall be unlawful and a public nuisance to conduct a gathering of ten (10) or more persons on any private property in a manner which constitutes a substantial disturbance of the quiet enjoyment of private or public property in a significant segment of a neighborhood, as a result of conduct constituting a violation of law. Illustrative of such unlawful conduct is excessive noise or traffic, obstruction of public streets by crowds or vehicles, public drunkenness, the service of alcohol to minors, fights, disturbances of the peace, litter. A gathering constituting a public nuisance may be abated by the city by all reasonable means including, but not limited to, an order requiring the gathering to be disbanded and citation and/or arrest of any law violators under any applicable local laws and state statutes.

(Ord. No. 1023, § 1, 11-17-10; Ord. No. 1025, 11-17-10)

7.05.030 - Notice of unruly gatherings—Posting, mail.

- A. When the city intervenes at a gathering which constitutes a public nuisance under this chapter, the premises at which such nuisance occurred shall be posted with a notice substantially in the form attached hereto as Exhibit "A" stating that a public nuisance under this chapter was caused by a gathering at the premises, the date and time of the police intervention, and that any subsequent or second police intervention with respect to a nuisance under this chapter at said premises, including a second intervention that same day or night, within sixty (60) days of the first intervention, shall result in the joint and several liability of any guests causing the public nuisance, persons who are residents or in control of the property at which the public nuisance occurred, persons who sponsored the gathering constituting the public nuisance, and owners of the premises as more fully set forth in Sections 7.05.040—7.05.060, below. The residents and persons in control of such property, and the sponsors of the event, shall be responsible for ensuring that such notice is not removed or defaced and shall be liable for a civil penalty of one hundred dollars (\$100.00) in addition to any other penalties which may be due under this chapter, if such notice is removed or defaced, provided, however, that the residents of the premises or sponsor

of the event, if present, shall be consulted as to the location in which such notice is posted in order to achieve both the security of the notice and its prominent display. The notice shall remain posted for the entire 60-day period.

- B. Notice of the police intervention shall also be mailed to any property owner at the address shown on the city's property tax assessment records and shall advise the property owner that any subsequent gathering resulting in a public nuisance within sixty (60) days on the same premises necessitating city intervention shall result in liability of the property owner for all penalties associated with such intervention as more particularly set forth below.

EXHIBIT A
IMPORTANT NOTICE REGARDING
PUBLIC NUISANCE

NOTICE IS HEREBY GIVEN THAT, pursuant to Coachella Municipal Code (CMC) Chapter 7.05, on:

Date: _____, 20____, at _____ a.m./p.m.

The Coachella Police Department found that a gathering, at the below-listed premises caused a public nuisance as defined by CMC Chapter 7.05 (e.g., disturbance of the peace, threat to public safety, etc.):

Address: _____, Coachella, California.

WARNING

IF THE POLICE RESPOND TO ANOTHER DISTURBANCE CONSTITUTING A NUISANCE (AS DEFINED BY CMC CHAPTER 7.05) AT THE ABOVE PREMISES WITHIN 60 DAYS OF THIS NOTICE, INCLUDING BUT NOT LIMITED TO A DISTURBANCE LATER TODAY OR TONIGHT, A SUBSEQUENT RESPONSE FEE WILL BE IMPOSED UPON:

1. ALL GUESTS CAUSING THE NUISANCE;
2. ALL SPONSORS OF THE GATHERING;
3. ALL RESIDENTS OF THE PREMISES;
4. ALL PERSONS IN CONTROL OF THE PREMISES; AND
5. ALL OWNERS OF THE PREMISES THAT RESIDE ON OR ADJACENT TO THE PREMISES, OR ARE PRESENT AT THE PREMISES WHEN THIS NOTICE IS FIRST POSTED.

Property owners who do not reside on or adjacent to the above premises, and who are not present when this Notice is first posted, are also jointly and severally liable for said fee, if the next disturbance occurs after two weeks after this Notice is mailed to said owner.

THIS NOTICE MUST REMAIN POSTED ON THE PREMISES FOR 60 DAYS

\$100 FINE FOR UNAUTHORIZED REMOVAL OF THIS NOTICE

(Name and Signature of the Officer Issuing This Notice)

(Officer's Phone Number)

Date: _____

Case Number: _____

(Ord. No. 1023, § 1, 11-17-10; Ord. No. 1025, 11-17-10)

7.05.040 - Persons liable for subsequent response to a gathering constituting a public nuisance.

If the city is required to intervene as to a gathering constituting a public nuisance on the same premises more than once in any 60-day period, including a second intervention during the same day or night as the first intervention, the following persons shall be jointly and severally liable for civil penalties as set forth in Section 7.05.050, below, in addition to liability for any injuries to city personnel or damage to city property.

- A. The person or persons who own the premises where the gathering constituting a public nuisance took place if any of the following are the case:
- (1) Said owner resides on or adjacent to the premises;
 - (2) Said owner was present when the notice described in Exhibit "A" was first posted; or
 - (3) The notice described in Exhibit "A" was mailed to said owner and fourteen (14) days have elapsed since the date of said mailing.

For purposes of this subsection, where a gathering takes place within the confines of a single unit in a building owned by a housing cooperative, the owner of the property shall be deemed to be the owner of the single unit and not the members of the housing cooperative in general. Where the gathering took place in the common area of a building owned by a housing cooperative, only the members of the cooperative owning units in the building where the gathering took place shall be deemed the owners of the property for purposes of this subsection. Other members of the housing cooperative may still be liable if they fall within the categories of person made liable by Section 7.05.040, subsections (B), (C), or (D), below.

- B. The person or persons residing on or otherwise in control of the property where such gathering took place.
- C. The person or persons who organized or sponsored such gathering.
- D.

All persons attending such gathering who engaged in any activity resulting in the public nuisance.

- E. Nothing in this section shall be construed to impose liability on the resident or owners of the premises or sponsor of the gathering, for the conduct of persons who are present without the express or implied consent of the resident or sponsor, as long as the resident and sponsor have taken all steps reasonably necessary to exclude such uninvited participants from the premises. Where an invited guest engages in conduct which the sponsor or resident could not reasonably foresee and the conduct is an isolated instance of a guest at the event violating the law which the sponsor is unable to reasonably control without the intervention of the police, the unlawful conduct of the individual guest shall not be attributable to the sponsor, owner, or resident for the purposes of determining whether the event constitutes a public nuisance under this section.
- F. There shall be no liability for civil penalties under this chapter for a subsequent intervention during the same day or night as the prior intervention, unless a reasonable time has been provided to abate the public nuisance, taking into account the size of the gathering, the time of day, and other relevant factors.
- G. There shall be no liability for civil penalties under this chapter for a second response during the same day or night as the first response when a person who would otherwise be liable under subsection (A) seeks assistance from the police department to abate a public nuisance under this chapter, and the person cooperates fully with the police while taking reasonable action to abate the public nuisance.
- H. If the city is required to intervene at a gathering constituting a public nuisance on the same premises more than once in any 60-day period, excluding a second intervention during the same day or night as the first intervention, the 60-day period shall be extended by another sixty (60) days from the date of the second intervention.

(Ord. No. 1023, § 1, 11-17-10; Ord. No. 1025, 11-17-10)

7.05.050 - Recovery of subsequent response fee.

- A. After given proper notice pursuant to Section 7.05.030 and a reasonable opportunity to abate a gathering constituting a public nuisance, a subsequent response fee shall be assessed against all persons liable for the city's intervention. The subsequent response fee shall include:
 - 1. The actual cost to the city of law enforcement services incurred as a result of a subsequent response;
 - 2. The actual cost of any medical treatment required by a police officer for injuries sustained during a subsequent response; and
 - 3. The cost of repairing or replacing any city equipment or property damaged or destroyed during a subsequent response.

- B. Except as provided in subsection (A) of this section, the subsequent response fee shall not exceed one thousand dollars (\$1,000.00) for any subsequent response.
- C. The remedies set forth in this chapter shall be in addition to any other penalties imposed by law for particular violations of law committed during the course of an event which is a public nuisance under this chapter, provided however, that if the only violation of law which constituted the public nuisance under this chapter is excessive noise, the remedies provided under this chapter shall be exclusive of any other remedies provided by law to the city for such excessive noise.
- D. The city shall bill all persons liable for subsequent response fees by mail by sending a letter in substantially the form attached hereto as Exhibit "B." Payment of the fees shall be due within thirty (30) days of the date the bill is deposited in the mail. If full payment is not received within the required time for payment, the bill will be delinquent, and all persons liable for the fees shall be charged interest at the maximum legal rate from the date the payment period expires and a further civil penalty in the amount of one hundred dollars (\$100.00).

EXHIBIT B

Date:

To:

Dear:

The City of Coachella was required to abate the public nuisance caused by a gathering of 10 or more persons at (location of property), which substantially disrupted the quiet enjoyment of property in a significant segment of the adjacent neighborhood. This is the (second/third/fourth, etc.) such public nuisance at this property within the last 60 days, and thus, a fee of _____ is imposed on you. If you fail to remit this fine to the City of Coachella by (30 days from the date of this notification) you will be liable for an additional \$100 penalty, plus interest. The payment should be remitted to the address listed below. Your liability is based on the fact that you were:

☐ An owner of the property to whom was sent prior notice of a public nuisance at the property within the previous 60 days; and/or

☐ An owner of the property who resided on or adjacent to the property when the public nuisance took place; and/or

☐ An owner of the property who was present when a Notice of a public nuisance was first posted at the property; and/or

☐ A person who resided on or was otherwise in control of the property when the public nuisance took place there; and/or

[] A person who organized or sponsored the event that created the public nuisance at such property; and/or

[] A person who attended the event constituting the public nuisance at such property and engaged in the conduct which resulted in the public nuisance.

If you believe that you are not liable you may defend this claim in the civil action which the City of Coachella will file against you upon your failure to remit the fee. You should be aware, however, that if you fail to prevail in that action you will be liable for the additional penalty of \$100 and interest on the total fee.

Sincerely yours,

(Name, title, address and phone number of signatory)

(Ord. No. 1023, § 1, 11-17-10; Ord. No. 1025, 11-17-10)

7.05.060 - Collection of delinquent costs for a subsequent city response.

The penalties assessed as a result of a subsequent city response to a loud or unruly gathering shall constitute a debt of all persons liable for the penalties in favor of the city and may be collected in any manner authorized by law and are recoverable in a civil action filed by the city in a court of competent jurisdiction. The remedies provided by this chapter are in addition to all other civil and criminal remedies available to the city with respect to the unlawful conduct constituting the public nuisance which gave rise to the need for the city response under this chapter.

(Ord. No. 1023, § 1, 11-17-10; Ord. No. 1025, 11-17-10)

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APPENDIX 5.1:

STUDY AREA PHOTOS

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16552 - Relevant Coachella

16552_L1_D 1.North
33, 40' 15.340000"116, 12' 1.280000"



16552_L1_D 2.South
33, 40' 15.300000"116, 12' 1.280000"



16552_L1_D 3.East
33, 40' 15.290000"116, 12' 1.010000"



16552_L1_D 4.West
33, 40' 15.290000"116, 12' 1.250000"



16552 - Relevant Coachella

16552_L2_E 1.North
33, 40' 14.970000"116, 11' 54.720000"



16552_L2_E 2.South
33, 40' 14.970000"116, 11' 54.690000"



16552_L2_E 3.East
33, 40' 14.970000"116, 11' 54.630000"



16552_L2_E 4.West
33, 40' 14.930000"116, 11' 55.020000"



16552 - Relevant Coachella

16552_L3_F 1.North
33, 39' 56.850000"116, 11' 57.000000"



16552_L3_F 2.South
33, 39' 56.610000"116, 11' 57.050000"



16552_L3_F 3.East
33, 39' 56.600000"116, 11' 57.020000"



16552_L3_F 4.West
33, 39' 56.640000"116, 11' 57.050000"



16552 - Relevant Coachella

16552_L4_G 1.North

33, 39' 59.150000"116, 12' 26.930000"



16552_L4_G 2.South

33, 39' 59.170000"116, 12' 26.910000"



16552_L4_G 3.East

33, 39' 59.150000"116, 12' 26.930000"



16552_L4_G 4.West

33, 39' 59.100000"116, 12' 27.020000"



16552 - Relevant Coachella

16552_L5_I 1.North
33, 39' 49.950000"116, 12' 36.880000"



16552_L5_I 2.South



16552_L5_I 3.East
33, 39' 49.550000"116, 12' 36.490000"



16552_L5_I 4.West
33, 39' 49.660000"116, 12' 36.600000"



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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

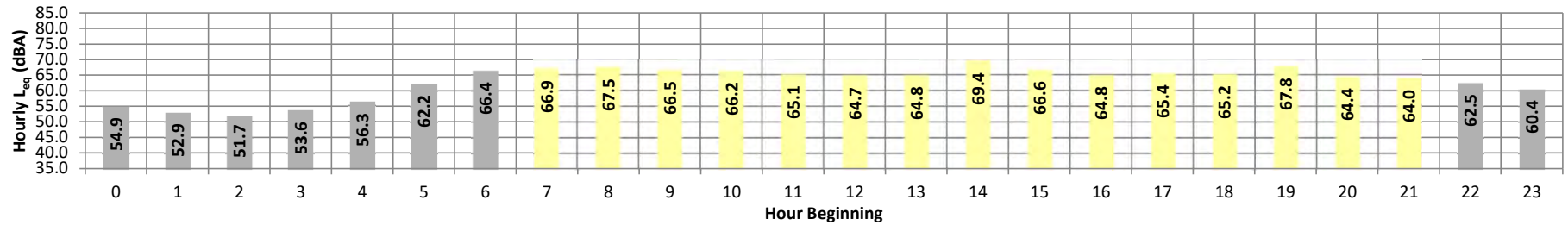
Date: Friday, July 25, 2025
Project:

Location: L1 - Located north of the site near the residence at 83876 52nd
Source: Ave.

Meter: Piccolo II

JN: 16552
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	54.9	65.3	43.0	65.1	64.7	63.0	60.8	52.7	47.5	44.3	43.7	43.2	54.9	10.0	64.9
	1	52.9	63.8	42.4	63.6	63.2	60.9	58.3	49.3	46.6	44.2	43.3	42.6	52.9	10.0	62.9
	2	51.7	62.0	44.2	61.8	61.4	59.3	56.7	48.7	47.4	46.0	45.4	44.4	51.7	10.0	61.7
	3	53.6	63.7	45.2	63.4	63.1	61.4	59.4	51.3	48.4	46.4	46.1	45.4	53.6	10.0	63.6
	4	56.3	66.8	46.6	66.5	66.1	64.0	61.8	53.6	50.2	48.1	47.5	46.9	56.3	10.0	66.3
	5	62.2	72.2	45.1	71.9	71.4	69.6	67.9	61.8	55.4	47.2	46.2	45.3	62.2	10.0	72.2
	6	66.4	75.1	50.2	74.9	74.4	73.0	71.6	67.2	62.0	52.9	51.7	50.5	66.4	10.0	76.4
Day	7	66.9	74.7	53.8	74.4	74.0	72.6	71.4	68.1	64.5	56.6	55.1	53.9	66.9	0.0	66.9
	8	67.5	77.1	53.6	76.5	75.8	73.3	71.4	68.3	64.9	56.4	54.8	53.7	67.5	0.0	67.5
	9	66.5	73.9	51.9	73.7	73.4	72.1	71.2	67.8	63.8	55.1	53.3	52.1	66.5	0.0	66.5
	10	66.2	73.9	50.7	73.6	73.2	71.8	70.9	67.5	63.5	54.6	52.3	50.9	66.2	0.0	66.2
	11	65.1	73.6	48.2	73.3	72.8	71.0	70.0	66.1	61.8	51.6	49.8	48.5	65.1	0.0	65.1
	12	64.7	73.8	49.2	73.4	72.7	70.7	69.5	65.7	61.1	52.5	51.0	49.4	64.7	0.0	64.7
	13	64.8	73.2	50.6	72.8	72.3	70.5	69.3	66.0	61.9	54.0	52.4	50.9	64.8	0.0	64.8
	14	69.4	80.4	50.8	80.2	79.7	78.0	76.7	65.8	61.4	53.6	52.5	51.1	69.4	0.0	69.4
	15	66.6	77.3	51.5	77.0	76.1	72.9	70.7	66.3	62.9	54.4	52.9	51.7	66.6	0.0	66.6
	16	64.8	72.9	50.0	72.6	72.2	70.5	69.3	66.1	62.0	53.9	51.9	50.3	64.8	0.0	64.8
	17	65.4	74.9	48.7	74.5	73.8	71.5	69.8	66.4	61.9	52.7	50.5	49.0	65.4	0.0	65.4
	18	65.2	74.3	49.1	73.9	73.4	71.5	70.2	66.0	61.6	52.8	51.0	49.3	65.2	0.0	65.2
	19	67.8	78.9	46.3	78.5	77.9	75.8	72.6	66.2	59.8	48.7	47.4	46.5	67.8	5.0	72.8
	20	64.4	72.8	52.1	72.4	71.9	70.6	69.5	65.4	60.6	53.6	52.7	52.2	64.4	5.0	69.4
	21	64.0	72.3	52.8	72.0	71.6	70.1	69.2	64.8	59.8	53.8	53.3	52.9	64.0	5.0	69.0
	Night	22	62.5	71.8	50.6	71.5	71.1	69.4	67.8	62.7	57.1	51.7	51.2	50.7	62.5	10.0
23		60.4	71.1	49.1	70.7	70.2	67.9	66.3	58.8	52.7	50.0	49.6	49.2	60.4	10.0	70.4
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour CNEL		
Day	Min	64.0	72.3	46.3	72.0	71.6	70.1	69.2	64.8	59.8	48.7	47.4	46.5	69.0	66.2	60.5
	Max	69.4	80.4	53.8	80.2	79.7	78.0	76.7	68.3	64.9	56.6	55.1	53.9			
Energy Average		66.2	Average:		74.6	74.1	72.2	70.8	66.4	62.1	53.6	52.1	50.8			
Night	Min	51.7	62.0	42.4	61.8	61.4	59.3	56.7	48.7	46.6	44.2	43.3	42.6			
	Max	66.4	75.1	50.6	74.9	74.4	73.0	71.6	67.2	62.0	52.9	51.7	50.7			
Energy Average		60.5	Average:		67.7	67.3	65.4	63.4	56.2	51.9	47.9	47.2	46.5			

24-Hour Noise Level Measurement Summary

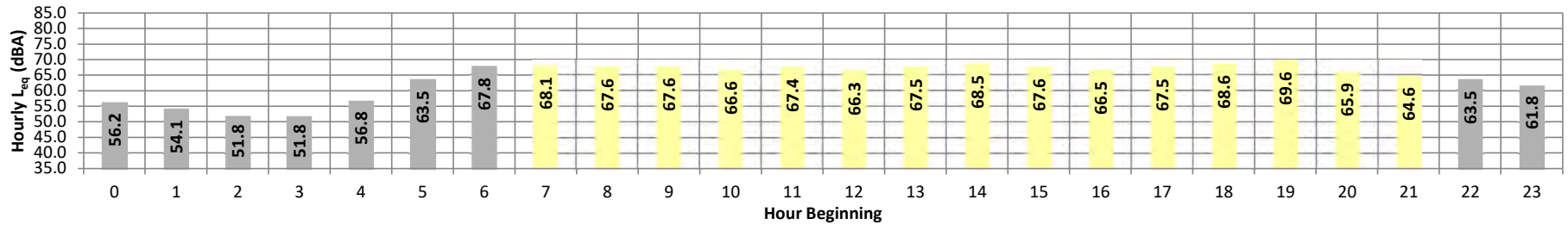
Date: Friday, July 25, 2025
Project:

Location: L2 - Located east of the site near the residence at 84045 52nd
Source: Ave.

Meter: Piccolo II

JN: 16552
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	56.2	67.3	39.9	66.8	66.1	63.6	61.5	55.3	49.4	41.4	40.7	40.1	56.2	10.0	66.2
	1	54.1	64.9	40.3	64.5	63.6	61.0	59.0	54.1	47.6	41.1	40.7	40.4	54.1	10.0	64.1
	2	51.8	62.4	39.1	62.0	61.1	58.5	57.0	52.0	46.0	39.4	39.3	39.1	51.8	10.0	61.8
	3	51.8	63.6	38.1	63.2	62.2	58.9	56.4	50.6	44.6	38.7	38.5	38.2	51.8	10.0	61.8
	4	56.8	68.3	40.4	67.9	67.1	64.2	61.9	55.3	49.9	41.9	41.1	40.5	56.8	10.0	66.8
	5	63.5	73.1	50.7	72.7	72.0	70.2	68.5	63.7	59.6	53.0	51.8	50.9	63.5	10.0	73.5
	6	67.8	76.5	57.0	76.2	75.5	73.5	72.2	68.4	65.1	59.2	58.2	57.1	67.8	10.0	77.8
Day	7	68.1	76.3	57.9	75.9	75.3	73.4	72.4	69.0	65.5	60.1	59.0	58.1	68.1	0.0	68.1
	8	67.6	75.7	58.1	75.3	74.7	73.0	72.0	68.4	65.1	60.2	59.3	58.3	67.6	0.0	67.6
	9	67.6	77.6	56.2	77.0	76.1	73.3	71.8	68.0	64.4	58.7	57.6	56.5	67.6	0.0	67.6
	10	66.6	74.6	55.7	74.2	73.6	72.0	71.0	67.6	64.1	58.3	57.1	55.9	66.6	0.0	66.6
	11	67.4	75.6	56.1	75.2	74.6	72.8	71.8	68.4	64.9	58.7	57.4	56.3	67.4	0.0	67.4
	12	66.3	74.6	54.8	74.2	73.6	72.0	70.8	67.4	63.6	57.4	56.3	55.2	66.3	0.0	66.3
	13	67.5	75.5	57.0	75.2	74.6	72.7	71.5	68.6	65.3	59.5	58.3	57.2	67.5	0.0	67.5
	14	68.5	79.5	55.1	79.0	78.1	75.2	73.0	68.0	64.3	57.9	56.7	55.4	68.5	0.0	68.5
	15	67.6	76.4	55.6	76.1	75.5	74.0	72.3	67.9	64.6	58.3	57.3	56.0	67.6	0.0	67.6
	16	66.5	74.3	54.6	73.8	73.1	71.5	70.7	67.8	64.5	57.7	56.3	54.9	66.5	0.0	66.5
	17	67.5	75.4	55.8	75.0	74.5	72.9	71.8	68.5	65.2	58.4	57.2	56.1	67.5	0.0	67.5
18	68.6	79.1	55.0	78.7	78.1	75.2	73.1	68.3	64.6	57.6	56.3	55.2	68.6	0.0	68.6	
	19	69.6	80.2	53.1	79.8	79.0	77.4	74.4	68.2	63.9	56.5	54.6	53.3	69.6	5.0	74.6
	20	65.9	74.2	53.9	73.9	73.4	71.6	70.4	66.8	63.2	56.9	55.5	54.2	65.9	5.0	70.9
	21	64.6	72.6	53.1	72.2	71.6	69.9	69.0	65.7	62.2	55.4	54.3	53.3	64.6	5.0	69.6
Night	22	63.5	72.6	51.0	72.2	71.5	69.3	68.0	64.2	60.6	53.9	52.4	51.3	63.5	10.0	73.5
	23	61.8	71.9	47.4	71.6	70.8	68.3	66.8	62.0	56.8	49.3	48.5	47.6	61.8	10.0	71.8
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	Leq (dBA)		
Day	Min	64.6	72.6	53.1	72.2	71.6	69.9	69.0	65.7	62.2	55.4	54.3	53.3	24-Hour CNEL	Daytime (7am-10pm)	Nighttime (10pm-7am)
	Max	69.6	80.2	58.1	79.8	79.0	77.4	74.4	69.0	65.5	60.2	59.3	58.3			
Energy Average		67.5	Average:		75.7	75.0	73.1	71.7	67.9	64.4	58.1	56.9	55.7	70.2 67.5 61.8		
Night	Min	51.8	62.4	38.1	62.0	61.1	58.5	56.4	50.6	44.6	38.7	38.5	38.2			
	Max	67.8	76.5	57.0	76.2	75.5	73.5	72.2	68.4	65.1	59.2	58.2	57.1			
Energy Average		61.8	Average:		68.6	67.8	65.3	63.5	58.4	53.3	46.4	45.7	45.0			

24-Hour Noise Level Measurement Summary

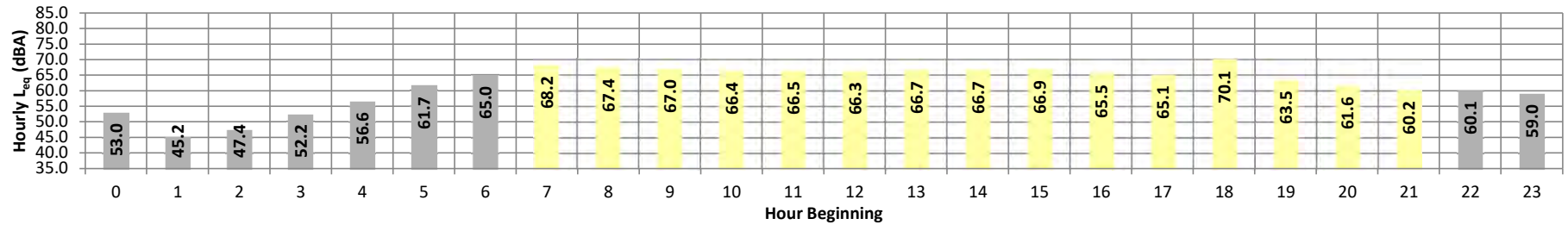
Date: Friday, July 25, 2025
Project:

Location: L3 - Located south of the site near the residence at 52815 Van
Source: Buren St.

Meter: Piccolo II

JN: 16552
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	53.0	64.9	39.1	64.6	64.1	61.8	58.9	47.2	41.9	39.6	39.5	39.2	53.0	10.0	63.0
	1	45.2	55.6	39.1	55.4	55.1	52.9	49.9	42.3	40.4	39.6	39.4	39.3	45.2	10.0	55.2
	2	47.4	59.9	38.5	59.5	58.8	55.6	51.7	41.5	39.9	39.1	39.0	38.7	47.4	10.0	57.4
	3	52.2	65.5	40.2	65.1	64.3	60.6	56.0	44.0	41.8	40.9	40.7	40.5	52.2	10.0	62.2
	4	56.6	69.4	39.8	69.1	68.4	64.9	61.7	50.3	42.8	40.6	40.4	40.1	56.6	10.0	66.6
	5	61.7	74.0	38.2	73.6	72.9	69.7	66.8	58.5	50.5	40.7	39.5	38.4	61.7	10.0	71.7
	6	65.0	75.6	44.1	75.3	74.6	72.4	70.7	64.1	57.4	47.3	45.7	44.3	65.0	10.0	75.0
Day	7	68.2	78.2	48.9	77.8	77.1	74.9	73.7	68.6	62.3	52.7	51.1	49.2	68.2	0.0	68.2
	8	67.4	77.2	48.0	76.8	76.1	74.1	73.1	67.8	60.7	50.7	49.3	48.1	67.4	0.0	67.4
	9	67.0	77.0	47.5	76.7	75.9	73.7	72.2	67.4	61.4	50.5	48.9	47.8	67.0	0.0	67.0
	10	66.4	75.8	47.5	75.5	74.9	73.3	71.9	67.1	60.4	50.6	49.0	47.8	66.4	0.0	66.4
	11	66.5	76.8	46.9	76.5	75.7	73.2	71.8	66.6	60.5	50.3	48.6	47.2	66.5	0.0	66.5
	12	66.3	77.5	45.9	77.1	76.2	73.1	71.3	65.9	59.0	48.7	47.2	46.1	66.3	0.0	66.3
	13	66.7	76.3	52.3	75.9	75.3	73.3	71.9	67.2	61.4	54.5	53.4	52.4	66.7	0.0	66.7
	14	66.7	77.0	50.3	76.5	75.7	73.7	72.3	66.6	60.0	52.8	51.7	50.6	66.7	0.0	66.7
	15	66.9	77.3	49.7	76.9	76.1	73.7	72.1	66.7	60.5	52.3	51.0	49.9	66.9	0.0	66.9
	16	65.5	75.2	48.3	74.9	74.2	72.1	70.8	65.8	59.8	51.5	49.7	48.5	65.5	0.0	65.5
	17	65.1	75.2	46.8	74.8	74.2	72.0	70.5	65.2	59.4	49.7	48.2	47.1	65.1	0.0	65.1
18	70.1	83.2	47.1	82.7	82.0	78.3	75.1	63.9	58.0	50.0	48.5	47.3	70.1	0.0	70.1	
19	63.5	74.0	47.8	73.8	73.1	70.7	68.9	62.7	57.1	50.3	49.1	48.1	63.5	5.0	68.5	
20	61.6	72.5	46.5	72.2	71.6	69.1	67.1	60.1	54.7	48.4	47.5	46.7	61.6	5.0	66.6	
21	60.2	71.4	48.1	71.1	70.5	67.5	65.4	58.3	53.5	49.2	48.7	48.3	60.2	5.0	65.2	
Night	22	60.1	71.6	48.9	71.2	70.5	67.7	65.3	57.3	53.0	50.0	49.6	49.2	60.1	10.0	70.1
	23	59.0	70.9	48.6	70.5	69.9	66.6	63.9	55.3	51.5	49.5	49.3	48.9	59.0	10.0	69.0
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	Leq (dBA)		
Day	Min	60.2	71.4	45.9	71.1	70.5	67.5	65.4	58.3	53.5	48.4	47.2	46.1	24-Hour CNEL	Daytime (7am-10pm)	Nighttime (10pm-7am)
	Max	70.1	83.2	52.3	82.7	82.0	78.3	75.1	68.6	62.3	54.5	53.4	52.4			
Energy Average		66.4	Average:		75.9	75.2	72.8	71.2	65.3	59.3	50.8	49.5	48.3	68.0 66.4 59.1		
Night	Min	45.2	55.6	38.2	55.4	55.1	52.9	49.9	41.5	39.9	39.1	39.0	38.4			
	Max	65.0	75.6	48.9	75.3	74.6	72.4	70.7	64.1	57.4	50.0	49.6	49.2			
Energy Average		59.1	Average:		67.2	66.5	63.6	60.5	51.1	46.6	43.0	42.6	42.1			

24-Hour Noise Level Measurement Summary

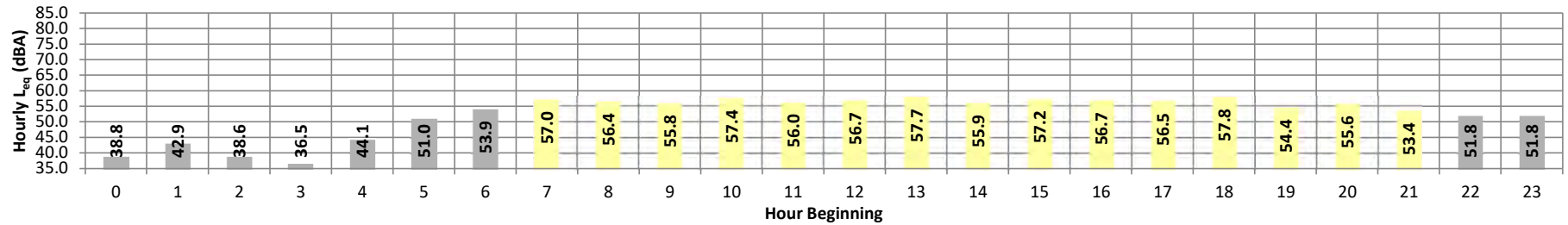
Date: Friday, July 25, 2025
Project:

Location: L4 - Located south of the site near the residence at 52480
Source: Calhoun St.

Meter: Piccolo II

JN: 16552
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	38.8	47.0	34.8	46.1	45.2	43.9	42.9	38.4	36.6	35.2	35.1	34.9	38.8	10.0	48.8	
	1	42.9	53.1	37.3	52.9	52.4	49.7	47.8	40.5	38.4	37.6	37.5	37.3	42.9	10.0	52.9	
	2	38.6	47.3	35.1	47.1	46.7	44.6	42.6	37.3	35.8	35.3	35.2	35.1	38.6	10.0	48.6	
	3	36.5	45.1	33.9	43.9	42.8	40.8	39.1	36.2	35.2	34.4	34.1	34.0	36.5	10.0	46.5	
	4	44.1	57.3	32.6	56.9	55.9	52.1	48.4	37.4	34.7	33.2	33.0	32.7	44.1	10.0	54.1	
	5	51.0	64.0	33.2	63.7	62.8	59.3	56.0	44.0	38.5	34.0	33.7	33.3	51.0	10.0	61.0	
	6	53.9	66.4	36.8	66.0	65.2	62.0	59.2	49.4	44.2	38.4	37.6	37.0	53.9	10.0	63.9	
Day	7	57.0	68.4	48.2	68.0	67.4	64.5	61.8	54.2	50.8	48.9	48.6	48.3	57.0	0.0	57.0	
	8	56.4	68.0	41.7	67.7	66.9	64.0	61.9	53.8	47.6	43.2	42.5	41.8	56.4	0.0	56.4	
	9	55.8	67.3	42.0	66.9	66.1	63.5	61.5	53.4	47.7	43.6	42.8	42.2	55.8	0.0	55.8	
	10	57.4	67.5	45.4	67.1	66.2	63.6	62.1	57.0	53.4	48.3	47.2	45.8	57.4	0.0	57.4	
	11	56.0	67.1	44.6	66.7	66.0	63.2	61.1	54.2	50.2	46.3	45.4	44.8	56.0	0.0	56.0	
	12	56.7	68.4	44.2	68.0	67.2	63.9	61.2	55.1	50.6	45.9	45.1	44.3	56.7	0.0	56.7	
	13	57.7	69.4	46.2	69.0	68.2	65.1	62.5	55.4	51.2	47.7	47.0	46.4	57.7	0.0	57.7	
	14	55.9	66.9	44.9	66.6	65.9	63.1	60.7	54.0	50.1	46.4	45.7	45.0	55.9	0.0	55.9	
	15	57.2	68.3	44.3	67.8	67.0	64.7	62.9	55.1	49.9	45.7	45.1	44.5	57.2	0.0	57.2	
	16	56.7	67.7	43.5	67.4	66.7	64.0	62.1	55.1	49.6	45.1	44.4	43.6	56.7	0.0	56.7	
	17	56.5	67.6	43.8	67.2	66.5	64.1	61.7	55.1	49.4	45.4	44.8	44.0	56.5	0.0	56.5	
18	57.8	69.9	43.6	69.4	68.4	64.9	62.7	55.6	50.0	45.3	44.5	43.8	57.8	0.0	57.8		
	19	54.4	66.1	42.7	65.7	64.9	61.6	59.2	52.0	48.1	44.2	43.5	42.9	54.4	5.0	59.4	
	20	55.6	67.8	40.3	67.4	66.7	63.8	60.6	52.4	46.3	41.9	41.2	40.5	55.6	5.0	60.6	
	21	53.4	66.0	40.2	65.6	64.6	61.0	58.1	49.9	44.9	41.3	40.9	40.3	53.4	5.0	58.4	
Night	22	51.8	64.2	40.3	63.9	63.3	59.4	56.2	48.1	43.9	41.0	40.7	40.4	51.8	10.0	61.8	
	23	51.8	64.4	42.3	64.1	63.4	59.3	55.5	47.6	44.7	42.7	42.5	42.3	51.8	10.0	61.8	
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour CNEL	Leq (dBA)		
Day	Min	53.4	66.0	40.2	65.6	64.6	61.0	58.1	49.9	44.9	41.3	40.9	40.3		Daytime (7am-10pm)	Nighttime (10pm-7am)	
	Max	57.8	69.9	48.2	69.4	68.4	65.1	62.9	57.0	53.4	48.9	48.6	48.3				
Energy Average		56.4	Average:			67.4	66.6	63.7	61.3	54.1	49.3	45.3	44.6		43.9	58.2	56.4
Night	Min	36.5	45.1	32.6	43.9	42.8	40.8	39.1	36.2	34.7	33.2	33.0	32.7				
	Max	53.9	66.4	42.3	66.0	65.2	62.0	59.2	49.4	44.7	42.7	42.5	42.3				
Energy Average		49.2	Average:			56.0	55.3	52.3	49.8	42.1	39.1	36.9	36.6	36.3			

24-Hour Noise Level Measurement Summary

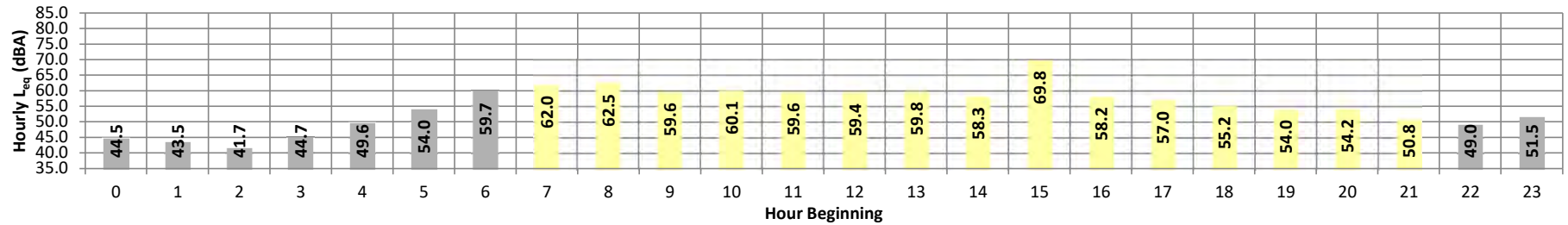
Date: Friday, July 25, 2025
Project:

Location: L5 - Located west of the site near the residence at 83465 52nd
Source: Ave.

Meter: Piccolo II

JN: 16552
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	44.5	53.9	40.1	53.7	53.2	51.1	48.7	42.7	41.6	40.6	40.5	40.2	44.5	10.0	54.5
	1	43.5	49.5	40.9	49.2	48.8	47.6	46.2	43.2	42.6	41.7	41.5	41.2	43.5	10.0	53.5
	2	41.7	49.9	37.5	49.7	49.4	47.9	46.1	40.2	39.2	38.4	38.2	37.8	41.7	10.0	51.7
	3	44.7	55.1	38.6	54.8	54.6	53.2	49.9	40.3	39.9	39.3	39.1	38.9	44.7	10.0	54.7
	4	49.6	61.1	38.0	60.9	60.5	58.4	55.6	42.9	39.4	38.7	38.5	38.3	49.6	10.0	59.6
	5	54.0	67.4	38.4	66.8	65.5	61.7	58.1	49.8	42.5	39.4	39.1	38.7	54.0	10.0	64.0
	6	59.7	71.1	44.8	70.8	70.2	67.4	64.6	57.6	53.5	46.5	45.7	45.0	59.7	10.0	69.7
Day	7	62.0	73.9	41.6	73.6	73.0	70.3	67.2	58.7	51.6	44.3	42.9	41.8	62.0	0.0	62.0
	8	62.5	76.6	41.5	75.9	74.7	69.1	65.9	57.4	50.5	43.0	42.4	41.7	62.5	0.0	62.5
	9	59.6	71.8	39.5	71.4	70.7	67.7	65.2	55.6	47.1	40.8	40.1	39.6	59.6	0.0	59.6
	10	60.1	71.3	44.7	71.0	70.5	68.5	66.1	57.4	50.8	45.5	45.2	44.8	60.1	0.0	60.1
	11	59.6	72.1	39.2	71.5	70.8	67.7	65.0	55.6	46.8	40.5	39.9	39.3	59.6	0.0	59.6
	12	59.4	71.9	38.6	71.6	71.1	67.6	64.4	54.3	46.2	39.9	39.3	38.8	59.4	0.0	59.4
	13	59.8	70.0	43.6	69.7	69.2	67.4	65.7	58.9	52.3	45.6	44.8	43.9	59.8	0.0	59.8
	14	58.3	69.2	41.7	69.0	68.5	66.5	64.5	55.4	48.2	43.1	42.5	41.9	58.3	0.0	58.3
	15	69.8	84.6	40.7	84.1	82.7	77.1	71.7	59.1	50.7	42.0	41.4	40.9	69.8	0.0	69.8
	16	58.2	70.3	38.3	70.0	69.3	66.5	63.6	54.6	44.8	39.5	39.0	38.5	58.2	0.0	58.2
	17	57.0	68.2	41.8	67.9	67.4	65.3	62.9	54.3	48.6	44.3	43.7	42.6	57.0	0.0	57.0
18	55.2	66.5	37.3	66.2	65.6	63.2	61.4	52.8	44.2	38.5	38.0	37.5	55.2	0.0	55.2	
	19	54.0	65.4	37.0	65.0	64.4	62.1	60.3	51.4	43.6	38.2	37.7	37.2	54.0	5.0	59.0
	20	54.2	64.5	49.1	64.2	63.7	61.5	59.2	51.5	49.8	49.3	49.2	49.1	54.2	5.0	59.2
	21	50.8	57.9	47.8	57.6	57.2	55.7	54.5	50.0	49.1	48.3	48.2	48.0	50.8	5.0	55.8
Night	22	49.0	56.2	46.0	55.9	55.5	54.3	52.8	48.3	47.3	46.7	46.5	46.3	49.0	10.0	59.0
	23	51.5	62.2	43.8	61.9	61.4	59.4	56.8	48.6	45.5	44.5	44.3	44.1	51.5	10.0	61.5
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour CNEL		
Day	Min	50.8	57.9	37.0	57.6	57.2	55.7	54.5	50.0	43.6	38.2	37.7	37.2	62.0	61.4	52.5
	Max	69.8	84.6	49.1	84.1	82.7	77.1	71.7	59.1	52.3	49.3	49.2	49.1			
Energy Average		61.4	Average:		69.9	69.3	66.4	63.8	55.1	48.3	42.9	42.3	41.7			
Night	Min	41.7	49.5	37.5	49.2	48.8	47.6	46.1	40.2	39.2	38.4	38.2	37.8			
	Max	59.7	71.1	46.0	70.8	70.2	67.4	64.6	57.6	53.5	46.7	46.5	46.3			
Energy Average		52.5	Average:		58.2	57.7	55.7	53.2	46.0	43.5	41.7	41.5	41.2			

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APPENDIX 8.1:

SAMPLE AIR CONDITIONING UNIT

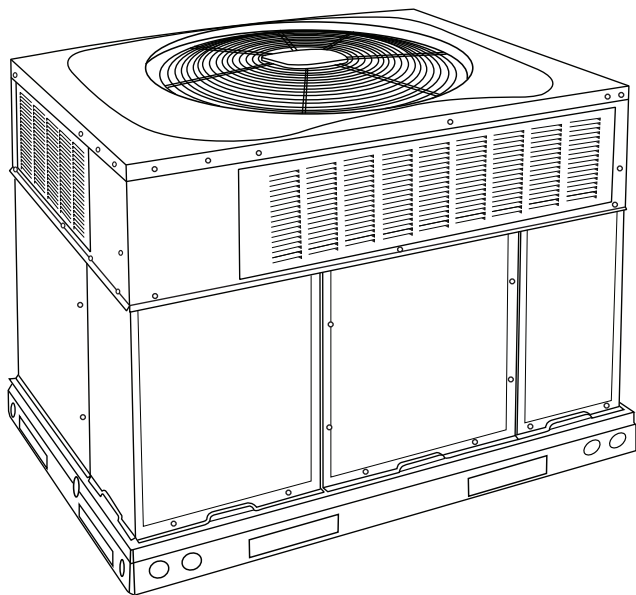
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50VR-A

**Performance™ 15 SEER 2-Stage Packaged Heat Pump
System with Puron® (R-410A)
Refrigerant
Single and Three Phase
2 to 5 Nominal Tons (Sizes 24-60)**



Product Data



A09033

Fig. 1 - Unit 50VR-A

Single-Packaged Products with Energy-Saving Features and Puron® refrigerant.

- 15.0-15.5 SEER / 12.0-12.5 EER at 95°F (35°C) OD
- Factory-Installed TXV
- Multi-speed ECM Blower Motor - Standard
- Sound levels as low as 71dBA
- Two Stages of Cooling/Heating
- Dehumidification Feature

FEATURES/BENEFITS

One-piece heat pump unit with optional electric heater, low sound levels, easy installation, low maintenance, and dependable performance.

Puron Environmentally Sound Refrigerant is Carrier's unique refrigerant designed to help protect the environment. Puron is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. Puron refrigerant is in service in millions of systems proving highly reliable, environmentally sound performance.

Easy Installation

Factory-assembled package is a compact, fully self-contained, electric cooling unit that is prewired, pre-piped, and pre-charged for minimum installation expense. These units are available in a variety of standard cooling sizes with voltage options to meet residential and light commercial requirements. Units are lightweight and install easily on a rooftop or at ground level. The high tech composite base eliminates rust problems associated with ground level applications.

Innovative Unit Base Design

On the inside a high-tech composite material will not rust and incorporates a sloped drain pan which improves drainage and helps inhibit mold, algae and bacterial growth. On the outside metal base rails provide added stability as well as easier handling and rigging.

Convertible duct configuration

Unit is designed for use in either downflow or horizontal applications. Each unit is converted from horizontal to downflow and includes horizontal duct covers. Downflow operation is provided in the field to allow vertical ductwork connections. The basepan seals on the bottom openings to ensure a positive seal in the vertical airflow mode.

Efficient operation High-efficiency design offers SEER (Seasonal Energy Efficiency Ratios) of up to 15.5 and HSPF of 8.5. (See page 4.)

Durable, dependable components

Scroll Compressors have 2 stages of cooling/heating and are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Each compressor also has vibration isolation to provide quieter operation. All compressors have internal high pressure and overcurrent protection.

Multi-speed ECM Blower Motor is standard on all 50VR-A.

Direct-drive PSC (Permanent Split Capacitor) condenser-fan motors are designed to help reduce energy consumption and provide for cooling operation down to 40°F (4.4°C) outdoor temperature. Motormaster® II low ambient kit is available as a field-installed accessory.

Thermostatic Expansion Valve - A hard shutoff, balance port TXV maintains a constant superheat at the evaporator exit (cooling cycle) resulting in higher overall system efficiency.

Refrigerant system is designed to provide dependability. Liquid filter driers are used to promote clean, unrestricted operation. Each unit leaves the factory with a full refrigerant charge. Refrigerant service connections make checking operating pressures easier.

High and Low Pressure Switches provide added reliability for the compressor.

Indoor and Outdoor coils are computer-designed for optimum heat transfer and efficiency. The indoor coil is fabricated from copper tube and aluminum fins and is located inside the unit for protection against damage. The outdoor coil is internally mounted on the top tier of the unit.

Low sound ratings ensure a quiet indoor and outdoor environment with sound ratings as low as 71dBA. (See Page 4.)

Easy to service cabinets provide easy 3 panel accessibility to serviceable components during maintenance and installation. The basepan with integrated drain pan provides easy ground level installation with a mounting pad. A nesting feature ensures a positive basepan to roof curb seal when the unit is roof mounted. A convenient 3/4-in. (19.05 mm) wide perimeter flange makes frame mounting on a rooftop easy.

Dehumidification Feature

This unit has independent fan speeds for low stage cooling and high stage cooling. In addition, 208/230 VAC models have the field-selectable capability to run an enhanced dehumidification ('DHUM') speed on high stage cooling (as low as 320CFM per ton). Coupled with the improved dehumidification associated with low stage cooling, the DHUM speed allows for a complete dehumidification solution independent of cooling stage. The dehumidification control must open the control circuit on humidity rise above the dehumidification set point.

NOTE: The enhanced dehumidification feature on high stage cooling does not support use of an economizer.

Standard horizontal metal duct covers with insulation come with the unit and cover the horizontal duct openings. These can be left in place if the units are converted to downflow.

Cabinets are constructed of heavyduty, phosphated, zinc-coated prepainted steel capable of withstanding 500 hours in salt spray. Interior surfaces of the evaporator/electric heater compartment are insulated with foil-faced insulation, which keeps the conditioned air from being affected by the outdoor ambient temperature and provides improved indoor air quality. (Conforms to American Society of Heating, Refrigeration and Air Conditioning Engineers No. 62P.) The sloped drain pan minimizes standing water in the drain. An external drain is provided.

Short-Cycling protection for the compressor is incorporated into our defrost control board ensuring a five minute delay (+/-2 minutes) before restarting compressor after shutdown for any reason.

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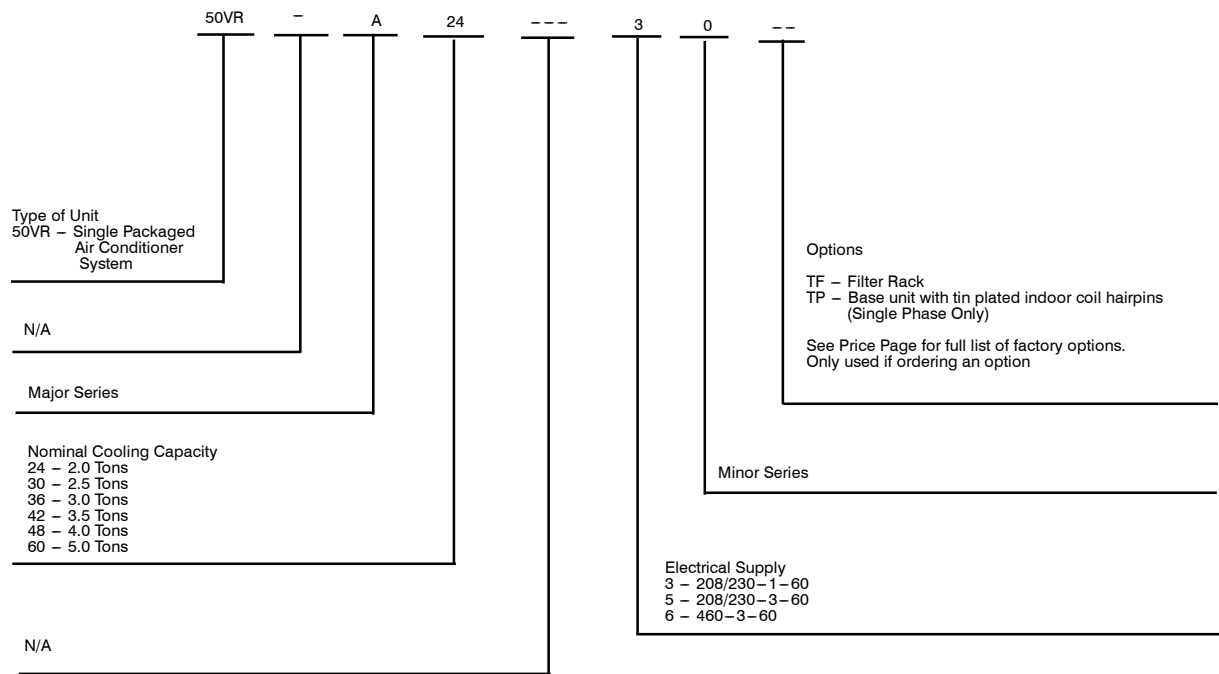
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MODEL NUMBER NOMENCLATURE



50VR-A



Use of the AHRI Certified
TM Mark indicates a
manufacturer's
participation in the
program For verification
of certification for individual
products, go to
www.ahridirectory.org.



AHRI* CAPACITIES

Cooling Capacities and Efficiencies

Unit Model 50VR-A	Nominal Tons	Standard CFM (High / Low Stage)	Net Cooling Capacities - Btuh (High Stage)	EER @A**	SEER†
24	2	850 / 650	23000	12.0	15.0
30	2-1/2	1000 / 750	30000	12.0	15.0
36	3	1200 / 900	34000	12.0	15.0
42	3-1/2	1400 / 1050	42000	12.0	15.0
48	4	1600 / 1200	47500	12.5	15.5
60	5	1750 / 1200	57000	12.0	15.0

Heat Pump Heating Capacities and Efficiencies

Unit Model 50VR-A	Heating Capacity (BTUH) @ 47_F (8.3_C)	COP @ 47_F (8.3_C)	Heating Capacity (BTUH) @ 17_F (---8.3_C)	COP @ 17_F (---8.3_C)	HSPF	Heating Cd
24	23,000	3.8	11200	2.2	8.0	0.25
30	29,000	3.8	15400	2.3	8.0	0.25
36	34,000	3.7	17200	2.3	8.0	0.25
42	42,000	3.6	24000	2.5	8.0	0.25
48	47,000	3.7	26000	2.3	8.0	0.25
60	57,000	3.5	32400	2.4	8.5	0.25

LEGEND

dB—Sound Levels (decibels)

db—Dry Bulb

SEER—Seasonal Energy Efficiency Ratio

wb—Wet Bulb

COP—Coefficient of Performance

* Air Conditioning, Heating & Refrigeration Institute.

**At "A" conditions—80°F (26.7°C) indoor db/67°F (19.4°C) indoor wb & 95°F (35°C) outdoor db.

† Rated in accordance with U.S. Government DOE Department of Energy) test procedures and/or AHRI Standards 210/240.

Notes:

1. Ratings are net values, reflecting the effects of circulating fan heat.

Ratings are based on:

Cooling Standard: 80°F (26.7°C) db, 67°F wb (19.4°C) indoor entering—air temperature and 95°F db (35°C) outdoor entering—air temperature.

2. Before purchasing this appliance, read important energy cost and efficiency information available from AHRI directory.org.

A-WEIGHTED SOUND POWER LEVEL (dBA)

Model 50VR-A	Sound Ratings (dBA)	TYPICAL OCTAVE BAND SPECTRUM(dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
24	73	58.5	65	66.5	67	62	57.5	54.5
30	76	59	63	69	70	63.5	59	53.5
36	73	64	63.5	68	68	65.5	60.5	52.5
42	71	64	62	65	66	63.5	59.5	52.5
48	74	59.5	65	70	67	64.5	60.5	52.5
60	73	68	63	66	66	65	59.5	52.5

NOTE: Tested in accordance with AHRI Standard 270 (not listed in AHRI).

PHYSICAL DATA

UNIT SIZE	24	30	36	42	48	60
NOMINAL CAPACITY (ton)	2	2-1/2	3	3-1/2	4	5
SHIPPING WEIGHT lb.	356	364	420	466	462	511
SHIPPING WEIGHT (kg)	162	165	191	212	210	232
COMPRESSORS	Scroll					
Quantity	1					
REFRIGERANT (R-410A)						
Quantity lb	9.0	10.0	11.0	14.6	12.0	14.8
Quantity (kg)	4.1	4.5	5.0	6.6	5.4	6.7
REFRIGERANT METERING DEVICE	TXV, Indoor TXV					
ORIFICE						
ID (in.)	.032 (2)	.040 (2)	.042 (2)	.042 (2)	.042 (2)	.052 (2)
ID (mm)	0.81 (2)	1.02 (2)	1.07 (2)	1.07 (2)	1.07 (2)	1.32 (2)
OUTDOOR COIL						
Rows...Fins/in.	2...21	2...21	2...21	2...21	2...21	2...21
Face Area (sq ft)	13.6	15.3	13.6	19.4	17.5	23.3
OUTDOOR FAN						
Nominal Cfm	2100	2500	3000	3000	3300	3600
Diameter in.	24	24	26	26	26	26
Diameter (mm)	609.6	609.6	660.4	660.4	660.4	660.4
Motor Hp (Rpm)	1/12 (800)	1/8 (810)	1/5 (810)	1/5 (810)	1/5 (810)	1/5 (810)
INDOOR COIL						
Rows...Fins/in.	3...17	3...17	3...17	3...17	3...17	4...17
Face Area (sq ft)	3.7	3.7	4.7	4.7	5.7	5.7
INDOOR BLOWER						
Nominal Low Stage Cooling Airflow (Cfm)	650	750	900	1050	1200	1400
Nominal High Stage Cooling Airflow (Cfm)	850	1000	1200	1400	1600	1750
Size in.	10x10	10x10	11x10	11x10	11x10	11x10
Size (mm.)	254x254	254x254	279.4x254	279.4x254	279.4x254	279.4x254
Motor HP (RPM)	1/2 (1050)	1/2 (1050)	3/4 (1000)	3/4 (1075)	1.0 (1075)	1.0 (1075)
HIGH-PRESSURE SWITCH (psig) Cut-out Reset (Auto)	650 +/- 15 420 +/- 25					
LOW-PRESSURE SWITCH (psig) cut-out Reset (auto)	20 +/- 5 45 +/- 5					
RETURN-AIR FILTERS†‡						
Throwaway Size in.	20x20x1	20x24x1	24x30x1	24x36x1		
Throwaway Size (mm)	508x508x25	508x610x25	610x762x25	610x914x25		

† Required filter sizes shown are based on the larger of the AHRI (Air Conditioning Heating and Refrigeration Institute) rated cooling airflow or the heating air-flow velocity of 300 ft/minute for throwaway type or 450 ft/minute for high-capacity type. Air filter pressure drop for non-standard filters must not exceed 0.08 in. W.C.

‡ If using accessory filter rack refer to the filter rack installation instructions for correct filter sizes and quantity.

Electric Heat Pressure Drop Tables (IN. W.C.)

Small Cabinet: 24-30

STATIC	STANDARD CFM (SCFM)											
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
5 kW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07
10 kW	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07	0.09	0.10	0.11
15 kW	0.00	0.00	0.00	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18
20 kW	0.00	0.00	0.02	0.04	0.06	0.08	0.09	0.11	0.13	0.15	0.17	0.19

Large Cabinet: 36-60

STATIC	STANDARD CFM (SCFM)														
	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
5 kW	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12
10 kW	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
15 kW	0.00	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15
20 kW	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16

OPTIONS AND ACCESSORIES

ITEM	DESCRIPTION	FACTORY INSTALLED OPTION	FIELD INSTALLED ACCESSORY
Coil Options	Base unit with tin plated indoor coil hairpins	X	
Compressor Start Kit	Compressor Start Kit assists compressor start-up by providing additional starting torque on sing phase units only.		X
Corporate Thermostats	Thermostats provide control for the system heating and cooling functions.		X
Crankcase Heater	Crankcase Heater provides anti-floodback protection for low-load cooling applications.		X*
Economizer	Vertical Economizer with Jade Honeywell W7220 Controller, Honeywell communicating actuator, and dry bulb sensor. (Contact MicroMetl Customer Service at 1-800-662-4822 to order.)		X
	Horizontal Economizer with Jade Honeywell W7220 Controller, Honeywell communicating actuator, and dry bulb sensor. (Contact MicroMetl Customer Service at 1-800-662-4822 to order.)		X
Electric Heaters	Electric Heat Supplement		X
Filter Rack	Filter Rack features easy installation, serviceability, and high-filtering performance for vertical applications. Includes 1-in. filter.	X	X
Flat Roof Curbs	Flat Roof Curbs in both 11-in (279 mm) and 14-in. (356 mm) sizes are available for roof mounted applications.		X
Low Ambient Kit	Low Ambient Kit (Motormaster II Control) allows the use of mechanical cooling down to outdoor temperatures as low as 0°F (-18°C) when properly installed.		X
Manual Outside Air Damper	Manual Outside Air Damper includes hood and filter rack with adjustable damper blade for up to 25% outdoor air.		X
Square-to-Round Duct Transition Kit	Square-to-Round Duct Transition Kit enable 24-48 size units to be fitted to 14 in (356 mm). round ductwork.		X
Time Guard II	Automatically prevents the compressor from restarting for at least 4 minutes and 45 seconds after shutdown of the compressor. Not required when a corporate programmable thermostat is applied or with a RTU-MP control.		X
Dual Point Electric Heaters	Allows you to power the electric heater and unit contactor separately by having two individual field power supply circuits connected respectively.		X

*Refer to Price Page for application detail.

Electric Heaters

CATALOG ORDERING NO.	NOMINAL CAPACITY (kW)	FUSE QTY	USED WITH SIZES					
			24	30	36	42	48	60
ELECTRIC HEATERS (208/230 — SINGLE PHASE — 60 Hz)								
CPHEATER052A00	5.0	—	X	X	X			
CPHEATER064A00	5.0	4	X	X	X	X	X	X
CPHEATER069A00	7.2	—	X					
CPHEATER070A00	7.2	4	X	X	X	X	X	X
CPHEATER050A00	10.0	4	X	X	X	X	X	X
CPHEATER066A00	15.0	4		X	X	X	X	X
CPHEATER054A00	20.0	6				X	X	X
ELECTRIC HEATERS (208/230 — THREE PHASE — 60 Hz)								
CPHEATER055A00	5.0	—		X	X	X	X	X
CPHEATER056A00	10.0	—		X	X	X	X	
CPHEATER068A00	10.0	6		X	X	X	X	X
CPHEATER058A00	20.0	6		X	X	X	X	X
CPHEATER059A01	20.0	6				X	X	X
ELECTRIC HEATERS (460 — THREE PHASE — 60 Hz)								
CPHEATER061A00	10.0	—			X	X	X	X
CPHEATER062A00	15.0	—			X	X	X	X
CPHEATER063A00	20.0	—				X	X	X

NOTE: Electric heaters are rated at 240v. Refer to Multiplication Factors table for other voltages.

X = Approved combinations.

Minimum Airflow for Safe Electric Heater Operation (CFM)

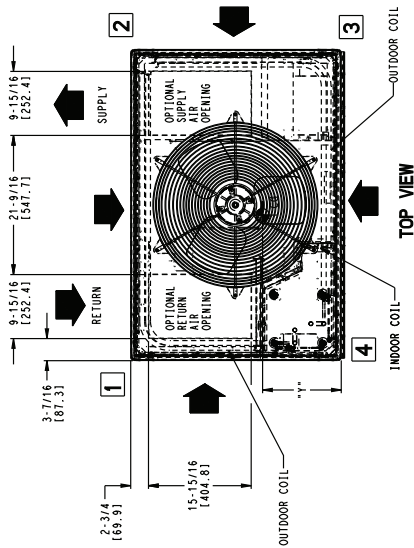
SIZE	24	30	36	42	48	60
Cfm	800	1000	1200	1400	1600	1750

UNIT DIMENSIONS - 50VR-A24-30

UNIT	ELECTRICAL CHARACTERISTICS	UNIT WT.		UNIT HEIGHT IN/MM	CENTER OF GRAVITY IN/MM						
		LB	KG		"A"						
					X			Y			Z
50VR-A24---30	208/230-1	348	157.9	44-1/8	1121	20-1/2	520.7	15-3/4	400.1	16-5/8	422.3
50VR-A30---(3/5)0	208/230-1, 208/230-3-60	356	161.5	46-1/8	1172	20-1/2	520.7	15-3/4	400.1	17-3/8	441.3

UNIT	VOLTAGE	CORNER WEIGHT LB/KG		
		"1"	"2"	"3"
50VR-A24- -- 30	208/230	41.8	23.7	55.7
				31.6
				83.5
				47.4
				139.2
				55.2
50VR-A30- -- (3,5)0	208/230	42.7	24.2	57.0
				32.3
				85.4
				48.4
				142.4
				56.5

NOTE: ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER



REQUIRED CLEARANCES TO COMBUSTIBLE MATL:

	INCHES	[MM]
TOP OF UNIT.....	14	[355.6]
DUCT SIDE OF UNIT.....	2	[50.8]
SIDE OPPOSITE DUCTS.....	14	[355.6]
BOTTOM OF UNIT.....	0	[0.0]
ELECTRICAL PANEL.....	36	[914.4]

NEC. REQUIRED CLEARANCES.

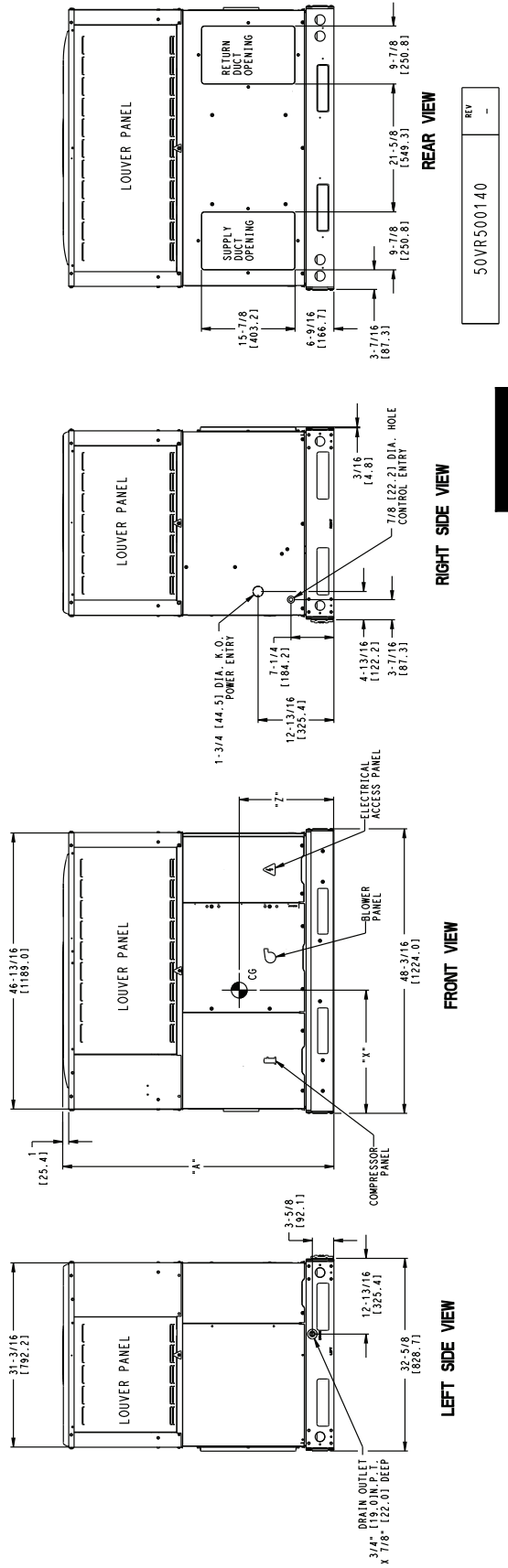
BETWEEN UNITS, POWER ENTRY SIDE.....	42	[1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE.....	36	[914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE.....	42	[1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

	INCHES	[MM]
EVAP. COIL ACCESS SIDE.....	36	[914.0]
POWER ENTRY SIDE.....	42	[1066.8]
(EXCEPT FOR NEC REQUIREMENTS)		
UNIT TOP.....	48	[1219.2]
SIDE OPPOSITE DUCTS.....	36	[914.0]
DUCT PANEL.....	12	[304.8]*

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 12 [304.8] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

DIMENSIONS IN [] ARE IN MILLIMETERS



50VR-A36-60 UNIT DIMENSIONS

UNIT	ELECTRICAL CHARACTERISTICS		UNIT WT.		UNIT HEIGHT IN/MM		
	LB	KG	LB	KG	"A"	X	Y Z
50VR-A36-3	208/230-1, 208/230-3-60, 460-3	413	187.3	85.0	44-3/4	1137	20-1/4 514.4 17-1/2 444.5 17-5/8 447.7
50VR-A42-3	208/230-1, 208/230-3-60, 460-3	444	201.4	91.3	50-3/4	1289	20-1/4 514.4 17-1/2 444.5 17-5/8 447.7
50VR-A48-3	208/230-1, 208/230-3-60, 460-3	447	202.8	92.0	48-3/4	1238	20-1/4 514.4 17-1/2 444.5 17-5/8 447.7
50VR-A60-3	208/230-1, 208/230-3-60, 460-3	503	228.2	101.2	54-3/4	1391	20-1/4 514.4 17-1/2 444.5 18 457.2

UNIT	CORNER WEIGHTS LB/KG			
	VOLTAGE	"1"	"2"	"3"
50VR-A36-3	208/230/460	49.6	28.1	66.1
50VR-A42-3	208/230/460	53.3	30.2	71.0
50VR-A48-3	208/230/460	53.6	30.4	71.5
50VR-A60-3	208/230/460	60.4	34.2	80.5

NOTE: ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER

REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

TOP OF UNIT.....	14 [355.6]	INCHES [MM]
DUCT SIDE OF UNIT.....	2 [50.8]	
SIDE OPPOSITE DUCTS.....	14 [355.6]	
BOTTOM OF UNIT.....	0 [0.0]	
ELECTRICAL PANEL.....	36 [914.4]	

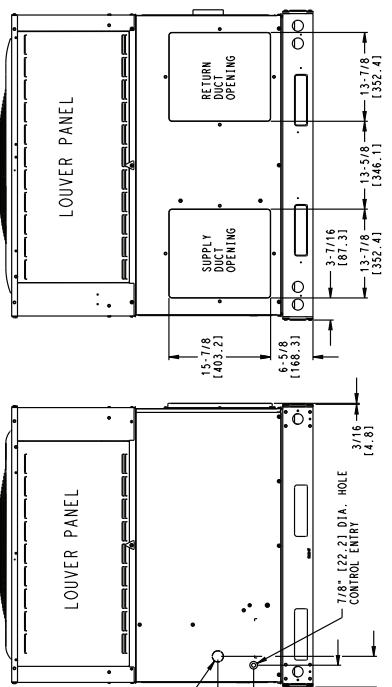
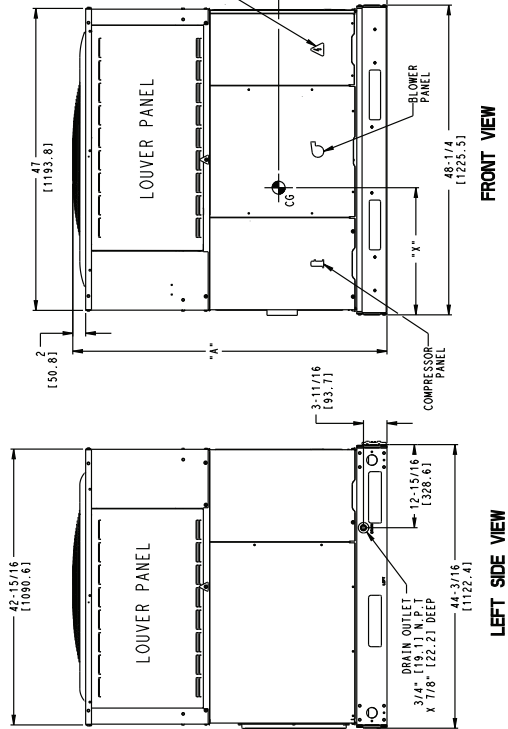
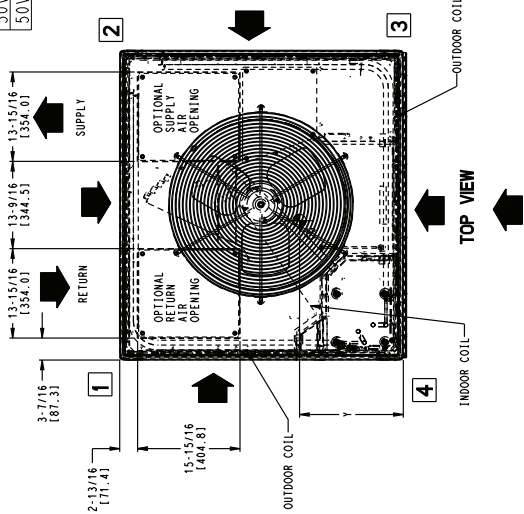
NEC. REQUIRED CLEARANCES.

BETWEEN UNITS, POWER ENTRY SIDE.....	42 [1066.8]	INCHES [MM]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE.....	36 [914.0]	
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE.....	42 [1066.8]	

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

EVAP. COIL ACCESS SIDE.....	36 [914.0]	INCHES [MM]
POWER ENTRY SIDE.....	42 [1066.8]	
(EXCEPT FOR NEC REQUIREMENTS)		
UNIT TOP.....	48 [1219.2]	
SIDE OPPOSITE DUCTS.....	36 [914.0]	
DUCT PANEL.....	12 [304.8]	

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 12 [304.8] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED. DIMENSIONS IN [] ARE IN MM



REAR VIEW

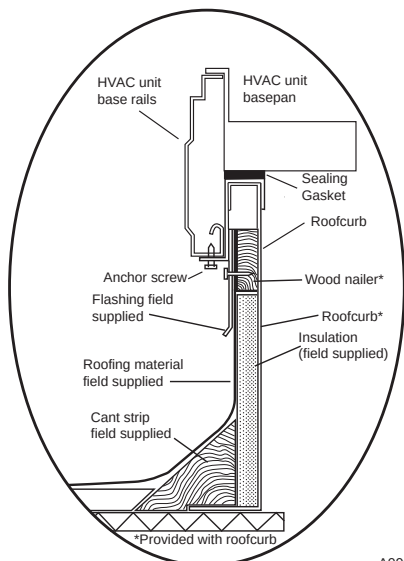
RIGHT SIDE VIEW

FRONT VIEW

LEFT SIDE VIEW

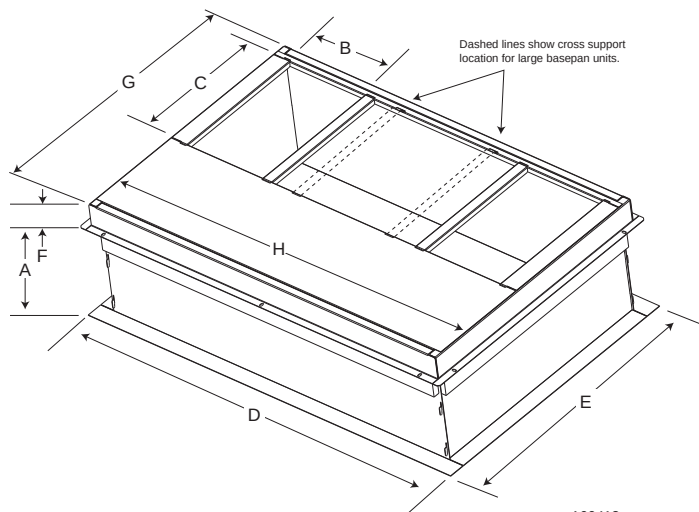
REV	50VR500141
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ROOF CURB ACCESSORY - 50VR-A24-60



A09090

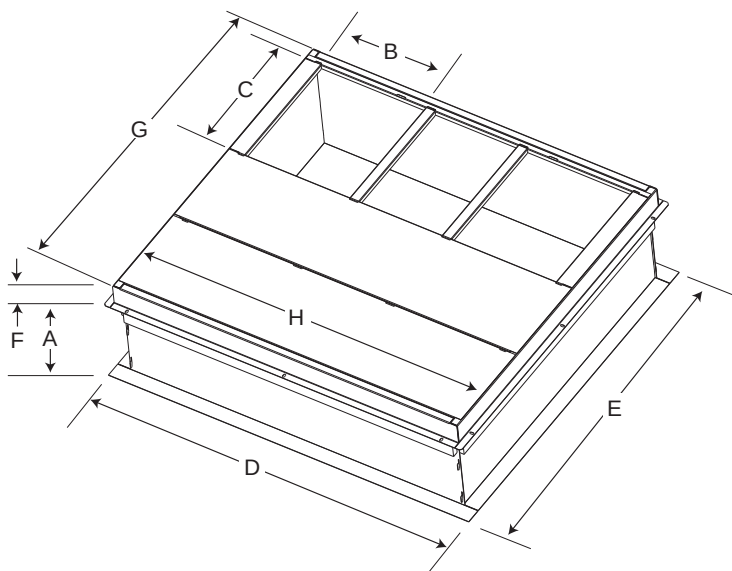
ROOF CURB DETAIL



SMALL/COMMON CURB

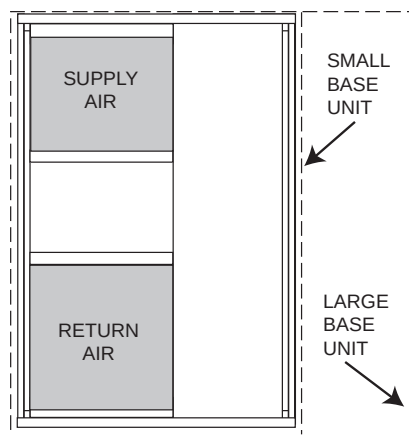
A09413

50VR-A



LARGE CURB

A09415



UNIT PLACEMENT ON
COMMON CURB

A09094

SMALL OR LARGE BASE UNIT

A09414

UNIT SIZE	CATALOG NUMBER	A IN. (mm)	B (small//common base) IN. (mm)*	B (large base) IN. (mm)*	C IN. (mm)	D IN. (mm)	E IN. (mm)	F IN. (mm)	G IN. (mm)	H IN. (mm)					
Small or Large	CPRFCURB010A00	11 (279)	10 (254)	14 (356)	16 (406)	47.8 (1214)	32.4 (822)	2.7 (69)	30.6 (778)	46.1 (1170)					
	CPRFCURB011A00	14 (356)													
Large	CPRFCURB012A00	11 (279)	14 (356)									43.9 (1116)		42.2 (1072)	
	CPRFCURB013A00	14 (356)													

* Part Numbers CPRFCURB010A00 and CPRFCURB011A00 can be used on both small and large basepan units. The cross supports must be located based on whether the unit is a small basepan or a large basepan.

NOTES:

1. Roof curb must be set up for unit being installed.
2. Seal strip must be applied, as required, to unit being installed.
3. Roof curb is made of 16-gauge steel.
4. Attach ductwork to curb (flanges of duct rest on curb).
5. Insulated panels: 1-in. (25.4 mm) thick fiberglass 1 lb. density.

SELECTION PROCEDURE (WITH EXAMPLE)

1. Determine cooling and heating requirements at design conditions:

Given:

- Required Cooling Capacity (TC) 34,000 Btuh
- Sensible Heat Capacity (SHC) 24,000 Btuh
- Required Heating Capacity 12,500 Btuh
- Condenser Entering Air Temperature 95°F(35°C)
- Indoor-Air Temperature 80°F (26°C) edb
67°F (19°C) ewb
- Evaporator Air Quantity 1200 CFM
- External Static Pressure 0.20 IN. W.C.
- Electrical Characteristics 230-1-60

2. Select unit based on required cooling capacity.

Enter Net Cooling Capacities table at condenser entering temperature of 95°F (35°C), indoor air entering at 1200 cfm and 67°F (19°C) ewb (entering wet bulb). The unit will provide a total capacity of 34,200 Btuh and a SHC of 24,500 Btuh.

3. Select electric heat.

The required heating capacity is 15,000 Btuh.

Determine additional electric heat capacity in kW.

15,000 Btuh = 4.4kW of heat required
3,414 Btuh/kW

Enter the electric Heater Packages table for 208/240, single-phase, 50VR-A36 unit. The 5 kW heater at 240v most closely satisfies the heating required. To calculate kW at the 208v, multiply the heater kW by multiplication factor 0.75 found in the Wattage Multiplication Factors table.

5 kW x 0.75 = 3.75 kW

3.75 kW x 3414 = 12802.50 Btuh

4. Determine fan speed and power requirements at design conditions.

Before entering the air delivery tables, calculate the total static pressure required. From the given example, the Wet Coil Pressure Drop Table, and the Filter Pressure Drop Table:

External Static Pressure	0.200 IN. W.C.
Filter	0.000 IN. W.C.
Wet Coil Pressure Drop	<u>0.130 IN. W.C.</u>
Total Static Pressure	0.330 IN. W.C.

Enter the table for Wet Coil Air Delivery—horizontal discharge, 230. At 0.33 IN. W.C. ESP (external static pressure) and medium speed, the fan will deliver 1293 cfm. Adjusting for 208v, the motor delivers 114 cfm (deduct 10%).

5. Select unit that corresponds to power source available.

The Electrical Data Table shows that the unit is designed to operate at 208-1-60.

APPENDIX 8.2:

CADNAA OPERATIONS NOISE CALCULATIONS

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16552 - Relevant Coachella

CadnaA Noise Prediction Model: 16552-02_Operation.cna

Date: 05.08.25

Analyst: B. Maddux

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.70
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.80
Min. Length of Section (ft)	3.30
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	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rcvr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
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 (°F)	50
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (mph)	6.7
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)				(ft)	(ft)	(ft)	(ft)
R1		R1	50.3	43.6	51.4	0.0	0.0	0.0		x	Total	5.00	r 6576713.36	2187811.69	5.00
R2		R2	49.6	41.4	49.9	0.0	0.0	0.0		x	Total	5.00	r 6577266.14	2187619.33	5.00
R3		R3	46.0	40.8	48.2	0.0	0.0	0.0		x	Total	5.00	r 6576991.23	2185760.47	5.00
R4		R4	47.5	40.7	48.6	0.0	0.0	0.0		x	Total	5.00	r 6575213.88	2186372.45	5.00
R5		R5	44.5	37.5	45.4	0.0	0.0	0.0		x	Total	5.00	r 6573722.13	2187348.69	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)				(min)	(min)	(min)	(ft)	(ft)	(ft)	(ft)
AC_RES001		AC_RES001	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6574935.11	2187653.94	3.00
AC_RES002		AC_RES002	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6574931.64	2187549.77	3.00
AC_RES003		AC_RES003	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6574931.64	2187443.87	3.00
AC_RES004		AC_RES004	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6574933.37	2187338.84	3.00
AC_RES005		AC_RES005	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6574938.58	2187234.67	3.00
AC_RES006		AC_RES006	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575145.35	2187552.90	3.00
AC_RES007		AC_RES007	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575122.44	2187480.50	3.00
AC_RES008		AC_RES008	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575072.44	2187475.29	3.00
AC_RES009		AC_RES009	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575057.85	2187322.69	3.00
AC_RES010		AC_RES010	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575145.35	2187272.17	3.00
AC_RES011		AC_RES011	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575128.69	2187199.25	3.00
AC_RES012		AC_RES012	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575174.52	2187219.04	3.00
AC_RES013		AC_RES013	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575264.62	2187208.63	3.00
AC_RES014		AC_RES014	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575283.89	2187270.61	3.00
AC_RES015		AC_RES015	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r 6575338.06	2187320.09	3.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height	Coordinates			
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night		X	Y	Z	
			(dBA)	(dBA)	(dBA)				(min)	(min)	(min)	(ft)	(ft)	(ft)	(ft)	
AC_RES016		AC_RES016	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575364.62	2187409.67	3.00
AC_RES017		AC_RES017	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575406.29	2187393.52	3.00
AC_RES018		AC_RES018	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575496.92	2187370.61	3.00
AC_RES019		AC_RES019	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575531.29	2187395.09	3.00
AC_RES020		AC_RES020	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575609.94	2187340.92	3.00
AC_RES021		AC_RES021	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575641.19	2187303.94	3.00
AC_RES022		AC_RES022	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575604.21	2187218.00	3.00
AC_RES023		AC_RES023	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575577.64	2187195.61	3.00
AC_RES024		AC_RES024	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575484.42	2187183.63	3.00
AC_RES025		AC_RES025	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575459.94	2187161.75	3.00
AC_RES026		AC_RES026	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575391.19	2187095.09	3.00
AC_RES027		AC_RES027	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575536.50	2187289.88	3.00
AC_RES028		AC_RES028	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575442.75	2187296.65	3.00
AC_RES029		AC_RES029	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575409.94	2187281.54	3.00
AC_RES030		AC_RES030	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575343.79	2187209.67	3.00
AC_RES031		AC_RES031	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575344.83	2187200.82	3.00
AC_RES032		AC_RES032	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575438.58	2186967.48	3.00
AC_RES033		AC_RES033	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575558.37	2186975.29	3.00
AC_RES034		AC_RES034	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575588.58	2187002.38	3.00
AC_RES035		AC_RES035	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575614.62	2187090.92	3.00
AC_RES036		AC_RES036	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575694.83	2187100.29	3.00
AC_RES037		AC_RES037	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575699.52	2187019.04	3.00
AC_RES038		AC_RES038	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575727.12	2186987.79	3.00
AC_RES039		AC_RES039	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575811.50	2187028.42	3.00
AC_RES040		AC_RES040	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575672.96	2186963.84	3.00
AC_RES041		AC_RES041	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575624.00	2186889.36	3.00
AC_RES042		AC_RES042	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575528.69	2186850.29	3.00
AC_RES043		AC_RES043	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575435.98	2186865.40	3.00
AC_RES044		AC_RES044	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575419.83	2186802.90	3.00
AC_RES045		AC_RES045	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575518.27	2186811.75	3.00
AC_RES046		AC_RES046	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575638.58	2186837.79	3.00
AC_RES047		AC_RES047	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575726.08	2186876.34	3.00
AC_RES048		AC_RES048	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575755.25	2186886.75	3.00
AC_RES049		AC_RES049	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575838.06	2186936.75	3.00
AC_RES050		AC_RES050	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575803.69	2187062.27	3.00
AC_RES051		AC_RES051	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575865.67	2187096.13	3.00
AC_RES052		AC_RES052	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575897.96	2187097.69	3.00
AC_RES053		AC_RES053	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575959.94	2187062.27	3.00
AC_RES054		AC_RES054	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575959.94	2187008.63	3.00
AC_RES055		AC_RES055	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575949.00	2186937.79	3.00
AC_RES056		AC_RES056	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575928.69	2186917.48	3.00
AC_RES057		AC_RES057	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575857.33	2186908.63	3.00
AC_RES058		AC_RES058	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575456.54	2186660.91	3.00
AC_RES059		AC_RES059	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575498.20	2186662.65	3.00
AC_RES060		AC_RES060	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575463.05	2186595.38	3.00
AC_RES061		AC_RES061	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575592.39	2186647.46	3.00
AC_RES062		AC_RES062	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575605.84	2186571.94	3.00
AC_RES063		AC_RES063	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575652.72	2186580.62	3.00
AC_RES064		AC_RES064	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575656.62	2186657.01	3.00
AC_RES065		AC_RES065	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575748.64	2186683.92	3.00
AC_RES066		AC_RES066	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575790.74	2186622.29	3.00
AC_RES067		AC_RES067	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575931.80	2186656.14	3.00
AC_RES068		AC_RES068	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575955.23	2186667.86	3.00
AC_RES069		AC_RES069	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576099.33	2186510.74	3.00
AC_RES070		AC_RES070	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576106.28	2186498.15	3.00
AC_RES071		AC_RES071	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576105.41	2186353.19	3.00
AC_RES072		AC_RES072	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576204.80	2186392.68	3.00
AC_RES073		AC_RES073	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576175.18	2186328.01	3.00
AC_RES074		AC_RES074	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576169.75	2186228.19	3.00
AC_RES075		AC_RES075	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576094.88	2186209.74	3.00
AC_RES076		AC_RES076	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576157.82	2186045.90	3.00
AC_RES077		AC_RES077	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576175.18	2186121.85	3.00
AC_RES078		AC_RES078	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576272.83	2186130.53	3.00
AC_RES079		AC_RES079	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576302.13	2186061.09	3.00
AC_RES080		AC_RES080	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576329.26	2186065.43	3.00
AC_RES081		AC_RES081	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576353.13	2186140.30	3.00
AC_RES082		AC_RES082	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576449.70	2186139.21	3.00
AC_RES083		AC_RES083	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576474.35	2186070.25	3.00
AC_RES084		AC_RES084	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576290.33	2186398.02	3.00
AC_RES085		AC_RES085	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576341.02	2186431.36	3.00
AC_RES086		AC_RES086	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576377.83	2186343.16	3.00
AC_RES087		AC_RES087	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576424.35	2186306.36	3.00
AC_RES088		AC_RES088	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576481.30	2186293.16	3.00
AC_RES089		AC_RES089	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576549.35	2186318.16	3.00
AC_RES090		AC_RES090	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576642.41	2186336.22	3.00
AC_RES091		AC_RES091	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576658.38	2186332.05	3.00
AC_RES092		AC_RES092	76.0	76.0	76.0	Lw	76		675.0							

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)				(min)	(min)	(min)	(ft)	(ft)	(ft)	(ft)	
AC_RES093		AC_RES093	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576738.94	2186461.91	3.00
AC_RES094		AC_RES094	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576648.66	2186382.05	3.00
AC_RES095		AC_RES095	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576551.44	2186357.75	3.00
AC_RES096		AC_RES096	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576531.30	2186446.63	3.00
AC_RES097		AC_RES097	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576522.96	2186496.63	3.00
AC_RES098		AC_RES098	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576644.49	2186480.66	3.00
AC_RES099		AC_RES099	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576461.85	2186503.58	3.00
AC_RES100		AC_RES100	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576466.71	2186455.66	3.00
AC_RES101		AC_RES101	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576491.02	2186365.38	3.00
AC_RES102		AC_RES102	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576607.69	2186534.83	3.00
AC_RES103		AC_RES103	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576594.49	2186602.19	3.00
AC_RES104		AC_RES104	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576561.85	2186578.58	3.00
AC_RES105		AC_RES105	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576493.10	2186567.47	3.00
AC_RES106		AC_RES106	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576488.24	2186562.61	3.00
AC_RES107		AC_RES107	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576420.19	2186554.27	3.00
AC_RES108		AC_RES108	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576353.52	2186562.61	3.00
AC_RES109		AC_RES109	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576363.24	2186493.86	3.00
AC_RES110		AC_RES110	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576549.14	2186065.60	3.00
AC_RES111		AC_RES111	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576585.07	2186132.79	3.00
AC_RES112		AC_RES112	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576679.34	2186117.68	3.00
AC_RES113		AC_RES113	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576691.84	2186044.25	3.00
AC_RES114		AC_RES114	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576731.43	2186036.43	3.00
AC_RES115		AC_RES115	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576752.26	2186110.39	3.00
AC_RES116		AC_RES116	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576846.53	2186114.56	3.00
AC_RES117		AC_RES117	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576872.57	2186043.73	3.00
AC_RES118		AC_RES118	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576984.55	2186128.10	3.00
AC_RES119		AC_RES119	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576984.03	2186197.37	3.00
AC_RES120		AC_RES120	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576909.03	2186210.39	3.00
AC_RES121		AC_RES121	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576896.01	2186305.71	3.00
AC_RES122		AC_RES122	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576965.28	2186340.60	3.00
AC_RES123		AC_RES123	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576970.49	2186380.71	3.00
AC_RES124		AC_RES124	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576894.97	2186372.37	3.00
AC_RES125		AC_RES125	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576855.91	2186460.91	3.00
AC_RES126		AC_RES126	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576764.87	2186503.34	3.00
AC_RES127		AC_RES127	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576767.65	2186563.06	3.00
AC_RES128		AC_RES128	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576769.73	2186624.17	3.00
AC_RES129		AC_RES129	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576772.51	2186683.90	3.00
AC_RES130		AC_RES130	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576777.37	2186745.01	3.00
AC_RES131		AC_RES131	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577062.09	2187006.12	3.00
AC_RES132		AC_RES132	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577009.31	2186955.42	3.00
AC_RES133		AC_RES133	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577007.93	2186942.92	3.00
AC_RES134		AC_RES134	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576954.45	2186892.92	3.00
AC_RES135		AC_RES135	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576862.09	2186817.23	3.00
AC_RES136		AC_RES136	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576857.23	2186889.45	3.00
AC_RES137		AC_RES137	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576771.12	2186816.53	3.00
AC_RES138		AC_RES138	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576768.34	2186888.06	3.00
AC_RES139		AC_RES139	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576714.87	2186829.03	3.00
AC_RES140		AC_RES140	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576644.04	2186845.70	3.00
AC_RES141		AC_RES141	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576612.79	2186784.59	3.00
AC_RES142		AC_RES142	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576544.73	2186807.51	3.00
AC_RES143		AC_RES143	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576528.06	2186775.56	3.00
AC_RES144		AC_RES144	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576453.06	2186778.34	3.00
AC_RES145		AC_RES145	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576970.43	2187043.62	3.00
AC_RES146		AC_RES146	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576921.12	2187092.23	3.00
AC_RES147		AC_RES147	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577005.84	2187101.95	3.00
AC_RES148		AC_RES148	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577054.45	2187151.95	3.00
AC_RES149		AC_RES149	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576956.54	2187154.03	3.00
AC_RES150		AC_RES150	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577005.15	2187204.03	3.00
AC_RES151		AC_RES151	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577018.34	2187211.67	3.00
AC_RES152		AC_RES152	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577071.81	2187265.15	3.00
AC_RES153		AC_RES153	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576939.87	2187263.06	3.00
AC_RES154		AC_RES154	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576893.34	2187313.06	3.00
AC_RES155		AC_RES155	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576887.79	2187316.53	3.00
AC_RES156		AC_RES156	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576841.95	2187365.84	3.00
AC_RES157		AC_RES157	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576818.34	2187246.40	3.00
AC_RES158		AC_RES158	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576767.65	2187295.01	3.00
AC_RES159		AC_RES159	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576855.84	2186897.78	3.00
AC_RES160		AC_RES160	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576843.34	2186963.76	3.00
AC_RES161		AC_RES161	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576840.56	2186971.40	3.00
AC_RES162		AC_RES162	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576818.34	2187036.67	3.00
AC_RES163		AC_RES163	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576814.87	2187044.31	3.00
AC_RES164		AC_RES164	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576785.70	2187108.20	3.00
AC_RES165		AC_RES165	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576764.18	2186901.95	3.00
AC_RES166		AC_RES166	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576749.59	2186970.01	3.00
AC_RES167		AC_RES167	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576746.81	2186983.20	3.00
AC_RES168		AC_RES168	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576716.26	2187049.17	3.00
AC_RES169		AC_RES169	76.0	76.0	76.0	Lw	76		675.0							

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)				(min)	(min)	(min)	(ft)	(ft)	(ft)	(ft)	
AC_RES170		AC_RES170	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576713.48	2187115.15	3.00
AC_RES171		AC_RES171	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576720.43	2187117.92	3.00
AC_RES172		AC_RES172	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576771.81	2187169.31	3.00
AC_RES173		AC_RES173	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576707.93	2187357.51	3.00
AC_RES174		AC_RES174	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576781.54	2187424.87	3.00
AC_RES175		AC_RES175	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576734.31	2187474.17	3.00
AC_RES176		AC_RES176	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576728.76	2187477.65	3.00
AC_RES177		AC_RES177	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576682.93	2187526.95	3.00
AC_RES178		AC_RES178	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576610.01	2187456.12	3.00
AC_RES179		AC_RES179	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576653.76	2187404.73	3.00
AC_RES180		AC_RES180	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576660.01	2187400.56	3.00
AC_RES181		AC_RES181	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576573.90	2187356.81	3.00
AC_RES182		AC_RES182	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576523.90	2187305.42	3.00
AC_RES183		AC_RES183	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576507.23	2187373.48	3.00
AC_RES184		AC_RES184	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576442.65	2187394.31	3.00
AC_RES185		AC_RES185	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576435.01	2187397.09	3.00
AC_RES186		AC_RES186	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576502.37	2187477.65	3.00
AC_RES187		AC_RES187	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576557.93	2187522.78	3.00
AC_RES188		AC_RES188	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576589.87	2187558.20	3.00
AC_RES189		AC_RES189	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576639.87	2187606.81	3.00
AC_RES190		AC_RES190	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576571.12	2187642.92	3.00
AC_RES191		AC_RES191	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576521.81	2187591.53	3.00
AC_RES192		AC_RES192	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576486.40	2187559.59	3.00
AC_RES193		AC_RES193	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576437.09	2187508.90	3.00
AC_RES194		AC_RES194	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576366.95	2187415.15	3.00
AC_RES195		AC_RES195	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576359.31	2187415.84	3.00
AC_RES196		AC_RES196	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576290.56	2187419.31	3.00
AC_RES197		AC_RES197	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576373.20	2187349.17	3.00
AC_RES198		AC_RES198	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576390.56	2187283.90	3.00
AC_RES199		AC_RES199	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576393.34	2187268.62	3.00
AC_RES200		AC_RES200	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576390.56	2187196.40	3.00
AC_RES201		AC_RES201	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576374.59	2187176.26	3.00
AC_RES202		AC_RES202	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576325.98	2187123.48	3.00
AC_RES203		AC_RES203	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576309.31	2187108.20	3.00
AC_RES204		AC_RES204	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576258.62	2187058.20	3.00
AC_RES205		AC_RES205	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576103.06	2187041.53	3.00
AC_RES206		AC_RES206	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576101.68	2187112.37	3.00
AC_RES207		AC_RES207	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576140.56	2187105.42	3.00
AC_RES208		AC_RES208	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576204.45	2187135.28	3.00
AC_RES209		AC_RES209	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576218.34	2187145.01	3.00
AC_RES210		AC_RES210	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576269.04	2187192.23	3.00
AC_RES211		AC_RES211	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576285.01	2187215.15	3.00
AC_RES212		AC_RES212	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576287.79	2187283.90	3.00
AC_RES213		AC_RES213	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576276.68	2187306.81	3.00
AC_RES214		AC_RES214	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576237.09	2187363.06	3.00
AC_RES215		AC_RES215	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576228.76	2187390.15	3.00
AC_RES216		AC_RES216	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576160.01	2187407.51	3.00
AC_RES217		AC_RES217	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576132.93	2187408.90	3.00
AC_RES218		AC_RES218	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576067.65	2187381.81	3.00
AC_RES219		AC_RES219	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576413.48	2187648.48	3.00
AC_RES220		AC_RES220	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576362.79	2187600.56	3.00
AC_RES221		AC_RES221	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576326.68	2187565.84	3.00
AC_RES222		AC_RES222	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576276.68	2187515.15	3.00
AC_RES223		AC_RES223	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576298.20	2187636.67	3.00
AC_RES224		AC_RES224	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576246.12	2187585.98	3.00
AC_RES225		AC_RES225	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576230.84	2187569.31	3.00
AC_RES226		AC_RES226	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576178.76	2187519.31	3.00
AC_RES227		AC_RES227	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576138.48	2187641.53	3.00
AC_RES228		AC_RES228	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576086.40	2187591.53	3.00
AC_RES229		AC_RES229	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576068.34	2187551.95	3.00
AC_RES230		AC_RES230	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576018.34	2187600.56	3.00
AC_RES231		AC_RES231	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576010.01	2187596.40	3.00
AC_RES232		AC_RES232	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575963.48	2187645.70	3.00
AC_RES233		AC_RES233	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576030.15	2187387.37	3.00
AC_RES234		AC_RES234	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575968.34	2187421.40	3.00
AC_RES235		AC_RES235	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575857.93	2187404.73	3.00
AC_RES236		AC_RES236	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575839.87	2187311.67	3.00
AC_RES237		AC_RES237	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575902.37	2187278.34	3.00
AC_RES238		AC_RES238	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575866.26	2187194.31	3.00
AC_RES239		AC_RES239	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575794.73	2187185.98	3.00
AC_RES240		AC_RES240	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575748.90	2187263.06	3.00
AC_RES241		AC_RES241	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575780.84	2187329.03	3.00
AC_RES242		AC_RES242	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575703.76	2187376.95	3.00
AC_RES243		AC_RES243	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575719.04	2187458.90	3.00
AC_RES244		AC_RES244	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575708.62	2187499.87	3.00
AC_RES245		AC_RES245	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575612.79	2187501.26	3.00
AC_RES246		AC_RES246	76.0	76.0	76.0	Lw	76		675.0							

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)				(min)	(min)	(min)	(ft)	(ft)	(ft)	(ft)	
AC_RES247		AC_RES247	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575861.40	2187607.51	3.00
AC_RES248		AC_RES248	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575519.04	2187535.28	3.00
AC_RES249		AC_RES249	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575459.31	2187535.28	3.00
AC_RES250		AC_RES250	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575400.98	2187535.98	3.00
AC_RES251		AC_RES251	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575340.56	2187535.28	3.00
AC_RES252		AC_RES252	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575280.84	2187535.28	3.00
AC_RES253		AC_RES253	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575221.12	2187508.90	3.00
AC_RES254		AC_RES254	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575162.09	2187508.20	3.00
AC_RES255		AC_RES255	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575249.68	2187011.88	3.00
AC_RES256		AC_RES256	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575255.11	2186937.01	3.00
AC_RES257		AC_RES257	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575255.11	2186861.06	3.00
AC_RES258		AC_RES258	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575254.02	2186785.10	3.00
AC_RES259		AC_RES259	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575254.02	2186711.32	3.00
AC_RES260		AC_RES260	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575248.60	2186636.45	3.00
AC_RES261		AC_RES261	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575251.85	2186561.58	3.00
AC_RES262		AC_RES262	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575249.68	2186487.79	3.00
AC_RES263		AC_RES263	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575900.73	2186431.37	3.00
AC_RES264		AC_RES264	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575918.09	2186296.82	3.00
AC_RES265		AC_RES265	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575915.92	2186221.95	3.00
AC_RES266		AC_RES266	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575915.92	2186149.25	3.00
AC_RES267		AC_RES267	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575907.24	2186079.81	3.00
AC_RES268		AC_RES268	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6575949.55	2185962.62	3.00
AC_RES269		AC_RES269	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576011.40	2185888.84	3.00
AC_RES270		AC_RES270	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576088.44	2185900.77	3.00
AC_RES271		AC_RES271	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576162.23	2185883.41	3.00
AC_RES272		AC_RES272	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576236.01	2185887.75	3.00
AC_RES273		AC_RES273	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576311.97	2185891.01	3.00
AC_RES274		AC_RES274	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576384.67	2185893.18	3.00
AC_RES275		AC_RES275	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576461.71	2185891.01	3.00
AC_RES276		AC_RES276	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576537.66	2185896.43	3.00
AC_RES277		AC_RES277	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576613.62	2185891.01	3.00
AC_RES278		AC_RES278	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576688.49	2185874.73	3.00
AC_RES279		AC_RES279	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576761.19	2185869.30	3.00
AC_RES280		AC_RES280	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576837.14	2185867.13	3.00
AC_RES281		AC_RES281	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576909.84	2185873.64	3.00
AC_RES282		AC_RES282	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6576985.80	2185875.81	3.00
AC_RES283		AC_RES283	76.0	76.0	76.0	Lw	76		675.00	0.00	405.00	3.00	r	6577065.01	2185881.24	3.00
AC_COM001		AC_COM001	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576119.31	2186998.36	5.00
AC_COM002		AC_COM002	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576153.17	2186997.06	5.00
AC_COM003		AC_COM003	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576116.27	2186911.56	5.00
AC_COM004		AC_COM004	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576323.52	2187049.36	5.00
AC_COM005		AC_COM005	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576353.90	2187074.32	5.00
AC_COM006		AC_COM006	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576374.52	2186991.85	5.00
AC_COM007		AC_COM007	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576413.58	2186949.54	5.00
AC_COM008		AC_COM008	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576447.22	2186877.92	5.00
AC_COM009		AC_COM009	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576470.01	2186898.54	5.00
AC_COM010		AC_COM010	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576488.45	2186982.09	5.00
AC_COM011		AC_COM011	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576414.67	2187047.19	5.00
AC_COM012		AC_COM012	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576472.18	2187109.04	5.00
AC_COM013		AC_COM013	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576530.77	2187152.44	5.00
AC_COM014		AC_COM014	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576592.62	2187087.34	5.00
AC_COM015		AC_COM015	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576543.79	2187038.51	5.00
AC_COM016		AC_COM016	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576538.37	2186966.90	5.00
AC_COM017		AC_COM017	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576607.81	2187032.00	5.00
AC_COM018		AC_COM018	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576545.96	2186889.86	5.00
AC_COM019		AC_COM019	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576614.89	2186715.91	5.00
AC_COM020		AC_COM020	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576316.27	2186668.00	5.00
AC_COM021		AC_COM021	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576818.36	2187433.14	5.00
AC_COM022		AC_COM022	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576839.19	2187408.14	5.00
AC_COM023		AC_COM023	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574668.44	2187585.74	5.00
AC_COM024		AC_COM024	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574687.98	2187599.85	5.00
AC_COM025		AC_COM025	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574668.44	2187266.73	5.00
AC_COM026		AC_COM026	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574689.06	2187241.77	5.00
AC_COM027		AC_COM027	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574702.08	2187207.05	5.00
AC_COM028		AC_COM028	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574703.17	2187183.18	5.00
AC_COM029		AC_COM029	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574703.17	2187164.73	5.00
AC_COM030		AC_COM030	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574771.53	2187198.37	5.00
AC_COM031		AC_COM031	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574853.99	2187196.20	5.00
AC_COM032		AC_COM032	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574818.18	2187196.20	5.00
AC_COM033		AC_COM033	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576815.08	2187599.83	5.00
AC_COM034		AC_COM034	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574674.23	2187437.70	5.00
AC_COM035		AC_COM035	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574714.16	2187428.15	5.00
AC_COM036		AC_COM036	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6574686.38	2187385.62	5.00
AC_COM037		AC_COM037	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576980.14	2186721.92	5.00
AC_COM038		AC_COM038	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6576980.14	2186680.69	5.00
AC_COM039		AC_COM039	88.9	88.9												

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)
AC_COM041		AC_COM041	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6577045.25	2186680.69	5.00
AC_COM042		AC_COM042	88.9	88.9	88.9	Lw	88.9		675.00	0.00	405.00	5.00	g	6577047.42	2186719.75	5.00
BBCOURT1		BBCOURT1	88.9	88.9	88.9	Lw	88.9		900.00	0.00	0.00	5.00	r	6577016.06	2187596.74	5.00
OUT01		OUT01	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576100.42	2187318.27	5.00
OUT02		OUT02	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576162.92	2187346.92	5.00
OUT03		OUT03	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576209.79	2187293.53	5.00
OUT04		OUT04	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576222.81	2187232.33	5.00
OUT05		OUT05	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576155.10	2187197.18	5.00
OUT06		OUT06	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576084.79	2187158.11	5.00
OUT07		OUT07	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576048.33	2187091.71	5.00
OUT08		OUT08	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576159.01	2186931.55	5.00
OUT09		OUT09	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576208.49	2186935.46	5.00
OUT10		OUT10	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576475.42	2186716.71	5.00
OUT11		OUT11	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576556.14	2186725.82	5.00
OUT12		OUT12	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576666.82	2186788.32	5.00
OUT13		OUT13	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576356.93	2186622.96	5.00
OUT14		OUT14	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576284.01	2186624.26	5.00
OUT15		OUT15	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576472.81	2187037.02	5.00
OUT16		OUT16	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576659.89	2187254.66	5.00
OUT17		OUT17	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576598.70	2187227.31	5.00
OUT18		OUT18	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576636.46	2187188.25	5.00
OUT19		OUT19	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576689.84	2186533.30	5.00
OUT20		OUT20	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6576264.06	2186460.39	5.00
OUT21		OUT21	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6575762.76	2186716.90	5.00
OUT22		OUT22	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6575813.54	2186750.75	5.00
OUT23		OUT23	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574727.84	2187533.69	5.00
OUT24		OUT24	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574860.48	2187410.77	5.00
OUT25		OUT25	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574859.09	2187392.02	5.00
OUT26		OUT26	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574740.34	2187346.19	5.00
OUT27		OUT27	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574812.56	2187260.77	5.00
OUT28		OUT28	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574863.26	2187287.16	5.00
OUT29		OUT29	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574867.43	2187556.61	5.00
OUT30		OUT30	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574821.59	2187580.91	5.00
OUT31		OUT31	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574797.29	2187560.77	5.00
OUT32		OUT32	91.5	91.5	91.5	Lw	91.5		900.00	0.00	0.00	5.00	r	6574685.48	2187506.61	5.00
KIDS1		KIDS1	89.4	89.4	89.4	Lw	89.4		900.00	0.00	0.00	5.00	r	6576843.75	2187642.31	5.00
SWIM01		SWIM01	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576374.94	2186786.67	5.00
SWIM02		SWIM02	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576325.63	2186806.81	5.00
SWIM03		SWIM03	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576278.41	2186860.97	5.00
SWIM04		SWIM04	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576229.11	2186908.19	5.00
SWIM05		SWIM05	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576072.86	2187220.00	5.00
SWIM06		SWIM06	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576155.50	2187272.78	5.00
SWIM07		SWIM07	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576183.19	2186898.91	5.00
SWIM08		SWIM08	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576531.49	2186693.83	5.00
SWIM09		SWIM09	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576324.25	2186594.00	5.00
SWIM10		SWIM10	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6576677.98	2186584.24	5.00
SWIM11		SWIM11	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6575969.43	2187250.47	5.00
SWIM12		SWIM12	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6574743.12	2187318.41	5.00
SWIM13		SWIM13	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6574764.65	2187293.41	5.00
SWIM14		SWIM14	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6574842.43	2187357.99	5.00
SWIM15		SWIM15	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6574843.81	2187456.61	5.00
SWIM16		SWIM16	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6574813.95	2187518.41	5.00
SWIM17		SWIM17	94.6	94.6	94.6	Lw	94.6		900.00	0.00	0.00	5.00	r	6574734.79	2187517.02	5.00
PICKLE1		PICKLE1	96.4	96.4	96.4	Lw	96.4		900.00	0.00	0.00	5.00	r	6577042.97	2187418.78	5.00
PICKLE2		PICKLE2	96.4	96.4	96.4	Lw	96.4		900.00	0.00	0.00	5.00	r	6576983.07	2187364.10	5.00
SPORT01		SPORT01	87.0	87.0	87.0	Lw	87.0		900.00	0.00	0.00	5.00	r	6576937.06	2187468.26	5.00
SPORT02		SPORT02	87.0	87.0	87.0	Lw	87.0		900.00	0.00	0.00	5.00	r	6576890.19	2187516.01	5.00
SPORT03		SPORT03	87.0	87.0	87.0	Lw	87.0		900.00	0.00	0.00	5.00	r	6576924.04	2187631.46	5.00
SPORT04		SPORT04	87.0	87.0	87.0	Lw	87.0		900.00	0.00	0.00	5.00	r	6577056.86	2187503.85	5.00
SPORT05		SPORT05	87.0	87.0	87.0	Lw	87.0		900.00	0.00	0.00	5.00	r	6576046.44	2187309.41	5.00
SPORT06		SPORT06	87.0	87.0	87.0	Lw	87.0		900.00	0.00	0.00	5.00	r	6576083.77	2187202.64	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)

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)

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)	

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)

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)

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	Coordinates				
							Begin	x	y	z	Ground	
							(ft)	(ft)	(ft)	(ft)	(ft)	
BUILDING			BUILDING00001	x	0		0.00 a	6576101.17	2187019.41	0.00	0.00	
								6576175.39	2187019.41	0.00	0.00	
								6576174.52	2186972.10	0.00	0.00	
								6576101.17	2186972.53	0.00	0.00	
BUILDING			BUILDING00002	x	0		0.00 a	6576109.85	2186932.60	0.00	0.00	
								6576131.99	2186920.45	0.00	0.00	
								6576118.97	2186898.32	0.00	0.00	
								6576097.27	2186910.47	0.00	0.00	
BUILDING			BUILDING00003	x	0		0.00 a	6576354.21	2187096.67	0.00	0.00	
								6576381.99	2187067.15	0.00	0.00	
								6576331.64	2187019.41	0.00	0.00	
								6576302.99	2187047.19	0.00	0.00	
BUILDING			BUILDING00004	x	0		0.00 a	6576414.54	2187069.32	0.00	0.00	
								6576435.37	2187047.19	0.00	0.00	
								6576410.63	2187022.45	0.00	0.00	
								6576389.37	2187045.02	0.00	0.00	
BUILDING			BUILDING00005	x	0		0.00 a	6576376.35	2187025.05	0.00	0.00	
								6576447.96	2186950.40	0.00	0.00	
								6576415.41	2186918.71	0.00	0.00	
								6576343.36	2186993.80	0.00	0.00	
BUILDING			BUILDING00006	x	0		0.00 a	6576461.85	2186926.09	0.00	0.00	
								6576486.15	2186902.66	0.00	0.00	
								6576493.97	2186909.17	0.00	0.00	
								6576510.03	2186891.37	0.00	0.00	
								6576461.85	2186843.19	0.00	0.00	
								6576418.88	2186889.20	0.00	0.00	
BUILDING			BUILDING00007	x	0		0.00 a	6576460.98	2186972.53	0.00	0.00	
								6576495.70	2187007.26	0.00	0.00	
								6576520.88	2186980.78	0.00	0.00	
								6576483.98	2186947.36	0.00	0.00	
BUILDING			BUILDING00008	x	0		0.00 a	6576550.82	2187064.11	0.00	0.00	
								6576578.17	2187035.03	0.00	0.00	
								6576545.18	2187002.92	0.00	0.00	
								6576518.27	2187032.43	0.00	0.00	
								6576537.80	2187051.96	0.00	0.00	
BUILDING			BUILDING00009	x	0		0.00 a	6576566.02	2187094.93	0.00	0.00	
								6576584.68	2187112.29	0.00	0.00	
								6576615.06	2187079.74	0.00	0.00	
								6576596.83	2187061.51	0.00	0.00	
BUILDING			BUILDING00010	x	0		0.00 a	6576526.52	2187170.89	0.00	0.00	
								6576557.33	2187139.64	0.00	0.00	
								6576538.24	2187122.27	0.00	0.00	
								6576507.86	2187154.39	0.00	0.00	
BUILDING			BUILDING00011	x	0		0.00 a	6576481.38	2187134.43	0.00	0.00	
								6576503.08	2187110.99	0.00	0.00	
								6576467.49	2187078.00	0.00	0.00	
								6576445.79	2187100.14	0.00	0.00	
BUILDING			BUILDING00012	x	0		0.00 a	6577064.34	2186749.27	0.00	0.00	
								6577062.60	2186662.90	0.00	0.00	
								6577065.64	2186662.46	0.00	0.00	
								6577063.90	2186575.66	0.00	0.00	
								6577013.12	2186576.53	0.00	0.00	
								6577013.12	2186597.79	0.00	0.00	
								6576950.19	2186597.79	0.00	0.00	
								6576951.92	2186699.36	0.00	0.00	
								6576946.72	2186699.36	0.00	0.00	
								6576949.32	2186754.91	0.00	0.00	
								6577026.58	2186754.04	0.00	0.00	
								6577026.58	2186750.14	0.00	0.00	
BUILDING			BUILDING00013	x	0		0.00 a	6574677.44	2187286.05	0.00	0.00	
								6574715.63	2187242.64	0.00	0.00	
								6574707.82	2187237.43	0.00	0.00	
								6574707.82	2187229.62	0.00	0.00	
								6574742.54	2187229.62	0.00	0.00	
								6574743.41	2187217.47	0.00	0.00	

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	Coordinates				
							Begin	x	y	z	Ground	
							(ft)	(ft)	(ft)	(ft)	(ft)	
								6574884.03	2187218.34	0.00	0.00	
								6574886.64	2187175.80	0.00	0.00	
								6574737.33	2187176.67	0.00	0.00	
								6574738.20	2187153.23	0.00	0.00	
								6574691.33	2187154.10	0.00	0.00	
								6574691.33	2187219.21	0.00	0.00	
								6574652.26	2187266.08	0.00	0.00	
BUILDING			BUILDING00014	x	0		0.00 a	6574709.82	2187615.91	0.00	0.00	
								6574730.22	2187593.77	0.00	0.00	
								6574680.74	2187547.33	0.00	0.00	
								6574646.01	2187583.79	0.00	0.00	
								6574684.64	2187618.94	0.00	0.00	
								6574697.23	2187605.49	0.00	0.00	
BUILDING			BUILDING00015	x	0		0.00 a	6574750.61	2187429.89	0.00	0.00	
								6574754.09	2187407.32	0.00	0.00	
								6574750.61	2187389.09	0.00	0.00	
								6574741.07	2187372.60	0.00	0.00	
								6574723.70	2187357.84	0.00	0.00	
								6574708.08	2187350.90	0.00	0.00	
								6574678.57	2187351.76	0.00	0.00	
								6574653.39	2187363.05	0.00	0.00	
								6574642.98	2187376.07	0.00	0.00	
								6574635.16	2187390.83	0.00	0.00	
								6574633.43	2187410.79	0.00	0.00	
								6574635.16	2187430.76	0.00	0.00	
								6574642.98	2187447.25	0.00	0.00	
								6574653.39	2187459.40	0.00	0.00	
								6574676.83	2187468.95	0.00	0.00	
								6574704.61	2187470.69	0.00	0.00	
								6574733.25	2187457.67	0.00	0.00	

Ground Absorption(s)

Name	Sel.	M.	ID	G	Coordinates	
					x	y
					(ft)	(ft)

Contour(s)

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)

Vertical Area Source(s)

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)

Rail

Name	Sel.	M.	ID	Lw'		Train Class	Correct.	Vmax
				Day	Night		Track	
				(dBA)	(dBA)		(dB)	(km(mph)

Sound Level Spectra

Name		ID	Type	Oktave Spectrum (dB)											Source	
				Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	

Roads

Name	Sel.	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
				Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
				(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(mph)	(mph)		(dB)		(%)	(dB)	(ft)	(ft)

RoadsGeo

Name	Height		Coordinates				Dist	LSlope
	Begin	End	x	y	z	Ground	(ft)	(%)
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		

APPENDIX 9.1:

CADNAA CONSTRUCTION NOISE CALCULATIONS

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16552 - Relevant Coachella

CadnaA Noise Prediction Model: 16552-02_Construction.cna

Date: 05.08.25

Analyst: B. Maddux

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.70
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.80
Min. Length of Section (ft)	3.30
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	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rcvr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
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 (°F)	50
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (mph)	6.7
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	63.2	-43.8	60.2	0.0	0.0	0.0		x	Total	5.00	r 6576713.36	2187811.69	5.00
R2		R2	61.5	-45.5	58.5	0.0	0.0	0.0		x	Total	5.00	r 6577266.14	2187619.33	5.00
R3		R3	63.6	-43.4	60.6	0.0	0.0	0.0		x	Total	5.00	r 6576991.23	2185760.47	5.00
R4		R4	63.3	-43.7	60.3	0.0	0.0	0.0		x	Total	5.00	r 6575213.88	2186372.45	5.00
R5		R5	54.6	-52.4	51.6	0.0	0.0	0.0		x	Total	5.00	r 6573722.13	2187348.69	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)

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)

Name	ID	Height			Coordinates			
		Begin	End		x	y	z	Ground
		(ft)	(ft)		(ft)	(ft)	(ft)	(ft)

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height (ft)	r
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
CA1		CA1	122.9	15.9	15.9	67.6	-39.4	-39.4	PWL-Pt	115.9					8	r

Name	ID	Height		Coordinates			
		Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)
CA1	CA1	8.00	r	6574560.40	2187709.86	8.00	0.00
				6577138.04	2187706.83	8.00	0.00
				6577112.80	2185819.53	8.00	0.00
				6575836.24	2185818.22	8.00	0.00
				6575837.65	2186427.42	8.00	0.00
				6575193.35	2186428.92	8.00	0.00
				6575194.92	2187107.91	8.00	0.00
				6574552.71	2187109.37	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)

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	Coordinates			
							Begin	x	y	z	Ground
							(ft)	(ft)	(ft)	(ft)	(ft)

Ground Absorption(s)

Name	Sel.	M.	ID	G	Coordinates	
					x	y
					(ft)	(ft)

Contour(s)

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)

Vertical Area Source(s)

Name	ID	Height			Coordinates			
		Begin	End		x	y	z	Ground
		(ft)	(ft)		(ft)	(ft)	(ft)	(ft)

Rail

Name	Sel.	M.	ID	Lw'		Train Class	Correct.	Vmax
				Day	Night			
				(dBA)	(dBA)		(dB)	(km(mph)

Sound Level Spectra

Name		ID	Type	Oktave Spectrum (dB)											Source	
				Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	

Roads

Name	Sel.	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
				Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
				(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(mph)	(mph)		(dB)		(%)	(dB)	(ft)	(ft)

RoadsGeo

Name	Height		Coordinates				Dist	LSlope
	Begin	End	x	y	z	Ground	(ft)	(%)
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		