Appendix F

Date Palm Apartments
Noise Impact Study

MD Acoustics

October 17, 2023

Date Palm Apartments - Noise

Noise Impact Study

City of Cathedral City, CA

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This noise assessment was prepared to evaluate the potential noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to the noise standards set forth by the Federal, State and Local agencies. Consistent with the City's Noise Guidelines, the project must demonstrate compliance to the applicable noise criterion as outlined within the City's Noise Element and Municipal Code.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An analysis of traffic noise impacts to and from the project site
- An analysis of construction noise impacts

1.2 Site Location and Study Area

The project site is located at the east side of Date Palm Drive between 30th Avenue and Mccallum Way in Cathedral City, California, as shown in Exhibit A. The site is currently zoned as general commercial and is proposed to be used as medium density residential use. The site is currently vacant and is surrounded by a vacant general commercial use to the south, existing low density residential to the north and east, and general commercial to the west across Date Palm Drive.

1.3 Proposed Project Description

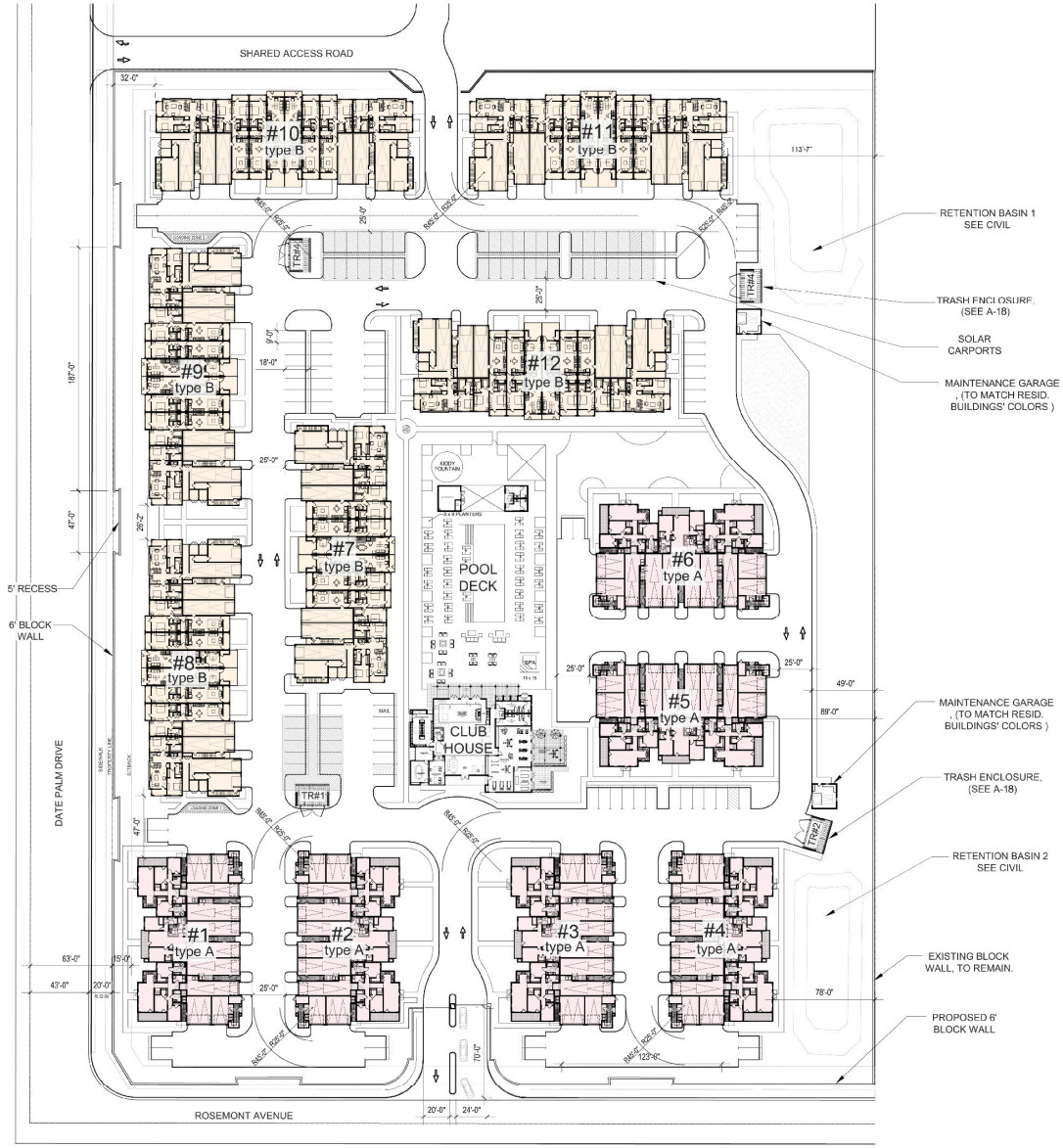
The Project proposes a medium residential-use development consisting of 204 units, on 10.8 acres. As a worst-case scenario, this assessment assumes the project is built-out in one (1) complete phase. Construction activities within the Project area will consist of on-site grading, building, paving, and architectural coating.

This study assesses both the traffic and short-term stationary noise to and from the project site and compares the results to the applicable City noise limits. The primary source of traffic noise propagates from Date Palm Drive. The primary source of short-term stationary noise propagates from construction equipment to be deployed in the area for construction activities. The site plan used for this is illustrated in Exhibit B.

Exhibit A

Location Map

Exhibit B
Site Plan



PROJECT LOCATION: DATE PALM DR. AND ROSEMONT AVE.
APN: 670-110-043-6
LOT SIZE: 11.49 AC
GENERAL PLAN DESIGNATION: GENERAL COMMERCIAL (GC)
ZONING DESIGNATION: PLANNED COMMUNITY COMMERCIAL (PCC)
ZONING PROPOSED: R-3
DENSITY PROPOSED: 17.7 DU/AC

BIG HOUSE: 2 story - (6 BUILDINGS, 10 UNITS EACH)

UNIT	TYPE	NET RENTABLE	BALC/ PATIO	UNIT GROSS	UNITS PER BLDG	UNITS TOTAL	TOTAL NET RENTABLE	DIRECT ACCESS GARAGE		stalls each bldg
A1-U	1B / 1BA	929	100	1,029	2	12	11,148	2	tandem	4
B2-U	2B / 2BA	1,232	65	1,297	2	12	14,784	1	standard	2
B4-L	2B / 2BA	1,090	100	1,190	1	6	6,540	2	tandem	2
B4-U	2B / 2BA	1,150	100	1,250	1	6	6,900	2	tandem	2
C1-L	3B / 2BA	1,280	140	1,420	2	12	15,360	2	tandem	4
C1-U	3B / 2BA	1,400	63	1,463	2	12	16,800	2	standard	4
TOTALS					10	60	71,532			18

STAK HOUSE: 2/3 story - (6 BUILDINGS, 24 UNITS EACH)

UNIT	TYPE	NET RENTABLE	BALC/ PATIO	UNIT GROSS	UNITS PER BLDG	UNITS TOTAL	TOTAL NET RENTABLE	DIRECT ACCESS GARAGE		stalls each bldg
A1 1st flr	1B / 1BA	749	131	880	2	12	8,988			
A3 2nd/3rd flr	1B / 1BA	777	0	777	4	24	18,648			
B1 2nd flr	2B / 2BA	1,113	0	1,113	2	12	13,356	1	standard	2
B2 1st flr	2B / 2BA	1,108	65	1,173	2	12	13,296	2	tandem	4
B3 2nd flr	2B / 2BA	1,150	190	1,340	2	12	13,800	2	tandem	4
B4 2nd/3rd flr	2B / 2BA	1,139	142	1,281	2	12	13,668	2	tandem	4
B5 1st flr	2B / 2BA	1,053	130	1,183	2	12	12,636			
B6 2nd/3rd flr	2B / 2BA	1,050	80	1,130	4	24	25,200			
B7 1st/2nd flr	2B / 2BA	1,114	80	1,194	2	12	13,368			
B8 2nd/3rd flr	2B / 2BA	1,114	80	1,194	2	12	13,368			
TOTALS					24	144	146,328			14

OVERALL UNIT MIX

1B1BA UNITS	48	23.5%
2B2BA UNITS	132	64.7%
3B2BA UNITS	24	11.8%
TOTAL UNITS	**204**	100.00%

PARKING

GARAGE STALLS TOTAL	192	
SURFACE STALLS TOTAL	118	
	318	1.56 PER UNIT

COMMON SPACES

CLUB HOUSE	+/-	6,000	SF
COMMON OPEN SPACE	+/-	220,000	SF
BUILDINGS FOOTPRINTS TOTAL	+/-	144,000	SF

2 STORY

3 STORY

NORTH

0' 40' 80' 160'

SCALE : 1:40 (ON 24 x 36 SHEET)

A-02

THE WREN
CATHEDRAL CITY, CA
HPA# 23158

CONCEPTUAL SITE PLAN AND PROJECT INFORMATION

COACHELLA VALLEY COMMUNITY DEVELOPMENT GROUP

HUMPHREYS & PARTNERS ARCHITECTS, L.P
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2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

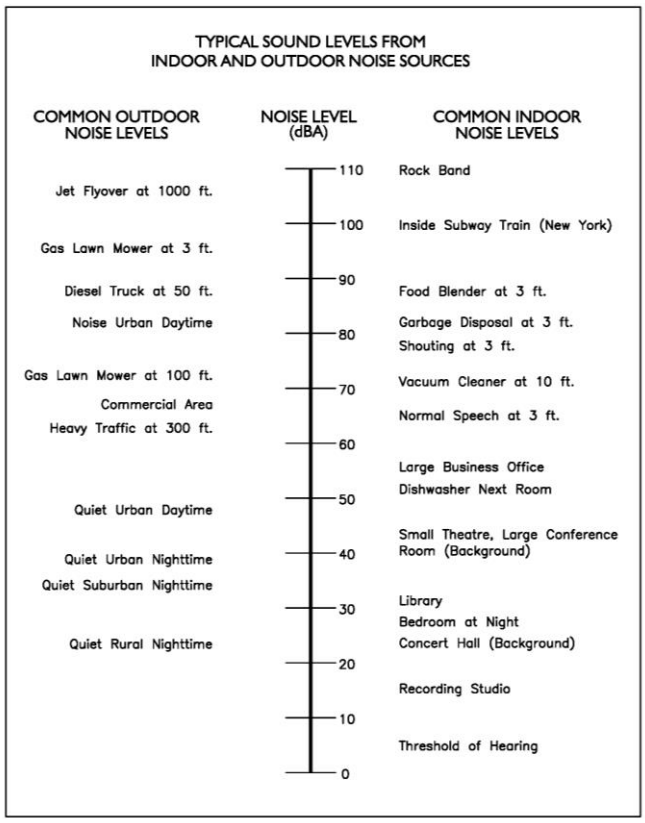
2.1 Sound, Noise and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic, or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines it loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measure in units of micro-Newton per square inch meter (N/m2), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB. Exhibit C illustrates references sound levels for different noise sources.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A-weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive the change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Table 1: Change in Noise Level Characteristics[1]

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud

[1] https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90 and L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

2.7 Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2–3 axle) and heavy truck percentage (4 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds and truck percentages equate to a louder

volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

2.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity and turbulence can further impact have far sound can travel.

3.0 Ground-Borne Vibration Fundamentals

3.1 Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude.

PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

3.3 Vibration Perception

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

The proposed project is located in the City of Cathedral City, California, and noise regulations are addressed through the efforts of various federal, state and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible to regulate noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible to regulate noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers.

The federal government advocates that local jurisdiction use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being constructed adjacent to a highway or, or alternatively that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix.” The matrix allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 and the Uniform Building Code (UBC) which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan.

4.3 City of Cathedral City Noise Regulations

The City of Cathedral City outlines their noise regulations and standards within the Municipal Code and the Noise Element of the City of Cathedral City General Chapter V Section C.

City of Cathedral City General Plan

The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable as illustrated in Exhibit D. (Table IV-3 and Exhibit III-12 of the City's GP, EIR).

The Noise Element outlined in Chapter V Environmental Hazards coordinates the community's land uses with the existing and future noise environment and designs measures intended to minimize or avoid community exposure to excessive noise levels. The implementation of the policies and programs contained in the Noise Element is meant to reduce or avoid current and future noise impacts.

The Noise Element identifies the major source of continuous, excessive noise in the City. Those sources are traffic noise propagating from main roadways and also freight rail service along the Southern Pacific Railroad, parallel to the I-10 highway. Airport noise can impact occasionally the noise environment. Sensitive receptors are identified as schools, libraries, and medical facilities. The City of Cathedral City has adopted their ordinance to address the State requirement outlined by the California Government Code Section 65032, subsection (f) and section 21083.1 of the California Environmental Quality Act (CEQA). Applicable noise ordinance for the City of Cathedral City is in place through Chapter 11.96 of the City Municipal Code.

The Noise Element also describes the noise contours projected for major roadways, and the data is presented in Table V-3.

In addition to the noise standards, the City has outlined goals, policies, and programs to reduce potential noise impacts and are presented below:

Goals, Policies, and Implementation Measures

Policies, goals and implementation program measures from the Noise Element that would mitigate potential impacts on noise include the following.

Exhibit D: Land Use Compatibility Guidelines

Land Use Compatibility for Community Noise Environments

Land Uses	CNEL (dBA) 50	55	60	65	70	75	80
Residential - Single Family Dwellings, Duplex, Mobile Homes	A	B			C	D	
Residential – Multiple Family		A	B		C	D	
Transient Lodging: Hotels and Motels	A		B		C		D
School Classrooms, Libraries, Churches, Hospitals, Nursing Homes and Convalescent Hospitals	A		B		C		D
Auditoriums, Concert Halls, Amphitheaters	B			C			
Sports Arenas, Outdoor Spectator Sports	B				C		
Playgrounds, Neighborhood Parks	A			C		D	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	A				C		D
Office Buildings, Business, Commercial and Professional	A			B		D	
Industrial, Manufacturing, Utilities, Agriculture	A				B	D	

Source: *California Department of Health Services, "Guidelines for the Preparation and Content of the Noise Element of the General Plan," 1990*

A **Normally Acceptable:** With no special noise reduction requirements assuming standard construction.

B **Conditionally Acceptable:** New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design

C **Normally Unacceptable**: New construction is discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

D **Clearly Unacceptable**: New construction or development should generally not be undertaken.

Goal: A noise environment that complements the City' low density residential character and its various land uses.

Policy 1: Protect noise sensitive land uses, including residential neighborhoods, schools, hospitals, libraries, churches, resorts and community open space, as well as land uses proposed in the vicinity of the railway, Interstate 10, the Mid-Valley Parkway, and Da Vall Drive from high noise levels generated by existing and future noise sources.

Program 1.A: Develop and maintain an inventory of existing noise sources and areas of incompatibility and establish procedures to reduce the noise levels in these areas, where economically and aesthetically feasible.

Program 1.B: Require building setbacks, the installation of wall and window insulation, soundwalls, earthen berms, and/or other mitigation measures in areas exceeding the City's noise limit standards for private development projects as they occur.

Program 1.C: Maintain and enforce a Noise Control ordinance that establishes community-wide noise standards and identifies measures designed to resolve noise complaints.

Program 1.D: Use Specific Plans and the development review process to encourage the use of buffers between noise sensitive land uses and incompatible land uses.

Program 1.E: Parking lots, loading zones, and large trash bins shall be located at a sufficient distance from adjacent residential properties to reduce associated noise impacts.

Policy 2: The relationship between land use designations in the Land Use Element and changes in the circulation pattern of the City, as well as individual developments shall be monitored and mitigated.

Program 2.A: The City zoning ordinance and development review standards shall be used to limit land use patterns and project designs to those that are noise compatible.

Program 2.B: Develop guidelines and minimal criteria requirements for noise analyses for future development projects. Studies shall evaluate project impacts and the effectiveness of proposed mitigation measures.

Program 2.C: Periodically review and amend the Land Use map as appropriate to assure reasonable land use/noise level compatibility.

Policy 3: Private sector project proposals shall include measures that assure that noise exposures levels comply with State of California noise insulation standards as defined in Title 25 (California Noise Insulation Standards).

Policy 4: Maintain a circulation map which maintains low levels of traffic within neighborhoods, and assigns truck routes to major roadways only.

Program 4.A: Designate primary truck routes and ensure that they are clearly marked throughout the community. Except for traffic providing location-specific services and deliveries, construction trucks and delivery trucks shall be limited to East Palm Canyon Drive, Interstate-10, Date Palm Drive, Palm Drive, Varner Road, Edom Hill Road, Dinah Shore Drive, Ramon Road, and Vista Chino.

Program 4.B: Development projects which result in through-traffic in residential neighborhoods shall be discouraged through the development review process.

Policy 5: Maintain an ongoing contact with the Palm Springs Airport to ensure that flight paths and airport improvements do not impact or extend noise contours into the City.

Policy 6: Coordinate with adjoining municipalities to assure noise-compatible land uses across jurisdictional boundaries.

Policy 7: The City shall restrict grading and construction activities that may impact residential neighborhoods to specified days of the week and times of day.

City of Cathedral City – Noise Ordinance

Section 11.96.030 "Prohibited acts" from the noise ordinance outlines the City's exterior noise limits as it relates to stationary noise sources.

(A) It is unlawful for any person to engage in the following activities:.

(6) To produce, suffer or allow to be produced noise or sounds that exceeds the dB(A) levels in the table below. Exterior noise shall be measured at the lot line of the lot where the noise or sounds are emanating. If the measurement location is on the boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply. Interior noise shall be measured at least four feet from the wall, floor, or ceiling nearest to the noise source and with all windows, doors and other openings to the exterior closed.

Noises caused by motor vehicles or trains are exempt from these standards.

In the event the ambient noise level exceeds these levels, no person shall produce, suffer or allow to be produced noise or sounds in excess of the ambient noise level.

Table 2: Cathedral City's Exterior Noise Limits

Zone	Time	dB(A) Level
Residential – Exterior Noise	7 a.m. – 10 p.m.	65
	10 p.m. - 7 a.m.	50
Residential – Interior Noise	7 a.m. – 10 p.m.	50
	10 p.m. - 7 a.m.	40
Commercial Industrial – Exterior Noise	7 a.m. – 10 p.m.	85
	10 p.m. – 7 a.m.	55

Section 11.96.060(L) of the Municipal Code enlist the exceptions from Chapter 11.96 as follows:

> (L) Construction, repair or excavation work performed pursuant to a valid written agreement with the city or any of its political subdivisions which agreement provides for noise mitigation measures;

In addition, Chapter 9.86 of the Municipal Code outlines the performance standards for commercial and industrial zones. This section classifies the performance standards in A, B, and C, referring all three to Chapter 11.96 for noise limits.

Also, Chapter 9.96 "Special Provisions Applying to Miscellaneous Problem Uses" outlines the noise attenuation requirements for carwashes on Section 9.96.140.

Vibration Regulations

Chapter 9.86 states vibration standards as follows: All uses shall be so operated as not to generate vibration discernible without instruments by the average person while on or beyond the lot upon which the source is located or within an adjoining enclosed space if more than one establishment occupies a structure. Vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempted from this standard.

Construction Regulations

Chapter 11.96 outlines the permitted hours for construction work in Section 11.96.070 limiting the time for construction work as stated in Subsection B of this Section.

1. October 1st through April 30th.

Monday – Friday:	7:00 a.m. to 5:30 p.m.
Saturday:	8:00 a.m. to 5:00 p.m.
Sunday:	No permissible hours
State holidays:	No permissible hours

2. May 1st through September 30th.

Monday – Friday:	6:00 a.m. to 7:00 p.m.
Saturday:	8:00 a.m. to 5:00 p.m.
Sunday:	No permissible hours
State holidays:	No permissible hours

5.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

5.1 Noise Measurement Procedure and Criteria

Noise measurements are taken to determine the existing noise levels. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as first row of houses
- Locations that are acoustically representative and equivalent of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance to CalTrans technical noise specifications. All measurements equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5-feet above the ground for all measurements
- Sound level meters were calibrated (Larson Davis CAL 200) before and after each measurement
- Following the calibration of equipment, a wind screen was placed over the microphone
- Frequency weighting was set on “A” and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements any noise contaminations such as barking dogs, local traffic, lawn mowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

5.2 Noise Measurement Locations

Noise monitoring locations were selected based on the distance of the nearest sensitive on-site receptors to the main noise source (Date Palm Drive). Short-term noise measurements were conducted near the southwestern corners of the project site. Measurements represent ambient levels at the site. Appendix A includes photos, field sheet, and measured noise data. Exhibit E illustrates the location of the measurements.

5.3 Stationary Noise Modeling

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP’s software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using referenced sound level data for the stationery on-site sources (HVAC and parking). The reference equipment sound level data is provided in Appendix D. Modeling assumes that project operations occur continuously. The SP model (see Appendix D and Exhibit F) assumes a total of 1 HVAC equipment per residential unit, and the parking lot area operating simultaneously (worst-case scenario) when in actuality the noise will be intermittent and lower in noise level.

5.3 FHWA Traffic Noise Prediction Model

Traffic noise from vehicular traffic was projected using a computer program that replicates the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Roadway volumes and percentages correspond to the project's traffic impact study as projected by the Trip Generation and VMT scoping agreement for Date Palm Apartments development made by Integrated Engineering Group, and Coachella Valley Association of Governments 2015 Traffic Census Report (Extrapolated to the opening year with a 2% annual growth). The referenced traffic data was applied to the model and is in Appendix B. The following outlines the key adjustments made to the REMEL for the roadway inputs:

- Roadway classification – (e.g. freeway, major arterial, arterial, secondary, collector, etc),
- Roadway Active Width – (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic Volumes (ADT), Travel Speeds, Percentages of automobiles, medium trucks and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g. soft vs. hard)
- Percentage of total ADT which flows each hour through-out a 24-hour period

Table 3 indicates the roadway parameters and vehicle distribution utilized for this study.

Table 3: Roadway Parameters and Vehicle Distribution

Roadway	Segment	Existing ADT[1]	Existing Plus Project ADT[2]	Speed (MPH)	Site Conditions
Data Palm	30th & Mc Callum	25,409	26,784	45	Hard
Rosemont Ave	Date Palm &Sierra	15,000	16,375	25	Hard
Major Arterial Vehicle Distribution (Truck Mix)					
Motor-Vehicle Type		**Daytime % (7AM to 7 PM)**	**Evening % (7 PM to 10 PM)**	**Night % (10 PM to 7 AM)**	**Total % of Traffic Flow**
Automobiles		81.4	10.4	8.2	96.05
Medium Trucks		86.7	5.3	8.0	2.65
Heavy Trucks		89.2	3.4	7.3	1.30

Notes:
[1] Per CVAG 2015 Traffic Census Report and VMT scoping agreement, Integrated Engineering Group.
[2] Trip Generation per Integrated Engineering Group report September 2023.

The following outlines key adjustments to the REMEL for project site parameter inputs:

- Vertical and horizontal distances (Sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (Noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

MD projected the traffic noise levels to the on-site receptors. The project noise calculation worksheet outputs are located in Appendix B.

5.4 FHWA Roadway Construction Noise Model

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RNCM), together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, % usage factor, and baseline parameters for the project site.

The project was analyzed based on the different construction phases. Construction noise is expected to be loudest during the grading, concrete and building phases of construction. The construction noise calculation output worksheet is located in Appendix C. The following assumptions relevant to short-term construction noise impacts were used:

- It is estimated that construction will occur over a 1-year time period. Construction noise is expected to be the loudest during the grading, concrete, and building phases.

1 = Short-Term Monitoring Location

Exhibit E
Measurement Locations

6.0 Existing Noise Environment

Onee (1) short-term (1-hour) ambient noise measurement were conducted at or near the project site. The noise measurements were taken to determine the existing baseline noise conditions.

6.1 Short-Term Noise Measurement Results

The results of the short-term noise data are presented in Table 4.

Table 4: Short-Term Noise Measurement Data (dBA)[1]

Date	Location	30-minutes dB(A)				
		Start	Stop	L_{EQ}	L_{MAX}	L_{MIN}
9/26/2023	ST-1	3:01 PM	4:01 PM	67	79	39

Notes:
1. Short-term noise monitoring location (ST-1) is illustrated in Exhibit E.

Noise data indicate the equivalent ambient level measured 67 dBA Leq(h) at the southwest corner of the project site. Maximum levels reach up to 79 dBA at the due to traffic along Date Palm Drive. The minumum noise level measured 39 dBA. The measured ambient level at or near the project site shows that the primary noise source is traffic along Date Palm Drive. Additional field notes and photographs are provided in Appendix A.

7.0 Future Noise Environment Impacts

This assessment analyzes future noise impacts to and from the project and compares the results to the City's Noise Standards. The analysis details the estimated exterior noise levels associated with traffic from adjacent roadways and project stationery noise sources.

7.1 Future Exterior Noise

The following outlines the exterior noise levels associated with the proposed project.

7.1.1 Noise Impacts to Off-Site Receptors Due to Stationary Sources

Sensitive receptors that may be affected by project operational noise include existing residential to the east and south. The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes project's noise sources are always operational when in reality the noise will be intermittent and cycle on/off depending on customer usage.

A total of three (3) receptors were modeled to evaluate the proposed project's operational impact. A receptor is denoted by a yellow dot. All yellow dots represent either a calibration point, property line, or a sensitive receptor such as an outdoor sensitive area (courtyard, patio, backyard, etc).

This study compares the Project's operational noise levels to two (2) different noise assessment scenarios: 1) Project Only operational noise level projections, 2) Project plus ambient noise level projections.

Project Operational Noise Levels

Exhibit F shows the "project only" operational noise levels at the property lines and/or sensitive receptor area. Operational noise levels at the adjacent uses are anticipated to range between 42 dBA to 43 dBA Leq (depending on the location).

The "project only" noise projections to the property lines are below the City's 65 dBA daytime residential limit, and 50 dBA nighttime limit as outlined within the City's noise ordinance (see Section 4.3 of this report).

Project Plus Ambient Operational Noise Levels

Table 5 demonstrates the project plus the ambient noise levels. Project plus ambient noise level projections are anticipated to range between 56 to 58 dBA Leq at nearby receptors (R1 – R3). The "project plus ambient" noise projections to the adjacent uses are not increasing the ambient noise level.

Exhibit F
Operational Noise Levels Contours

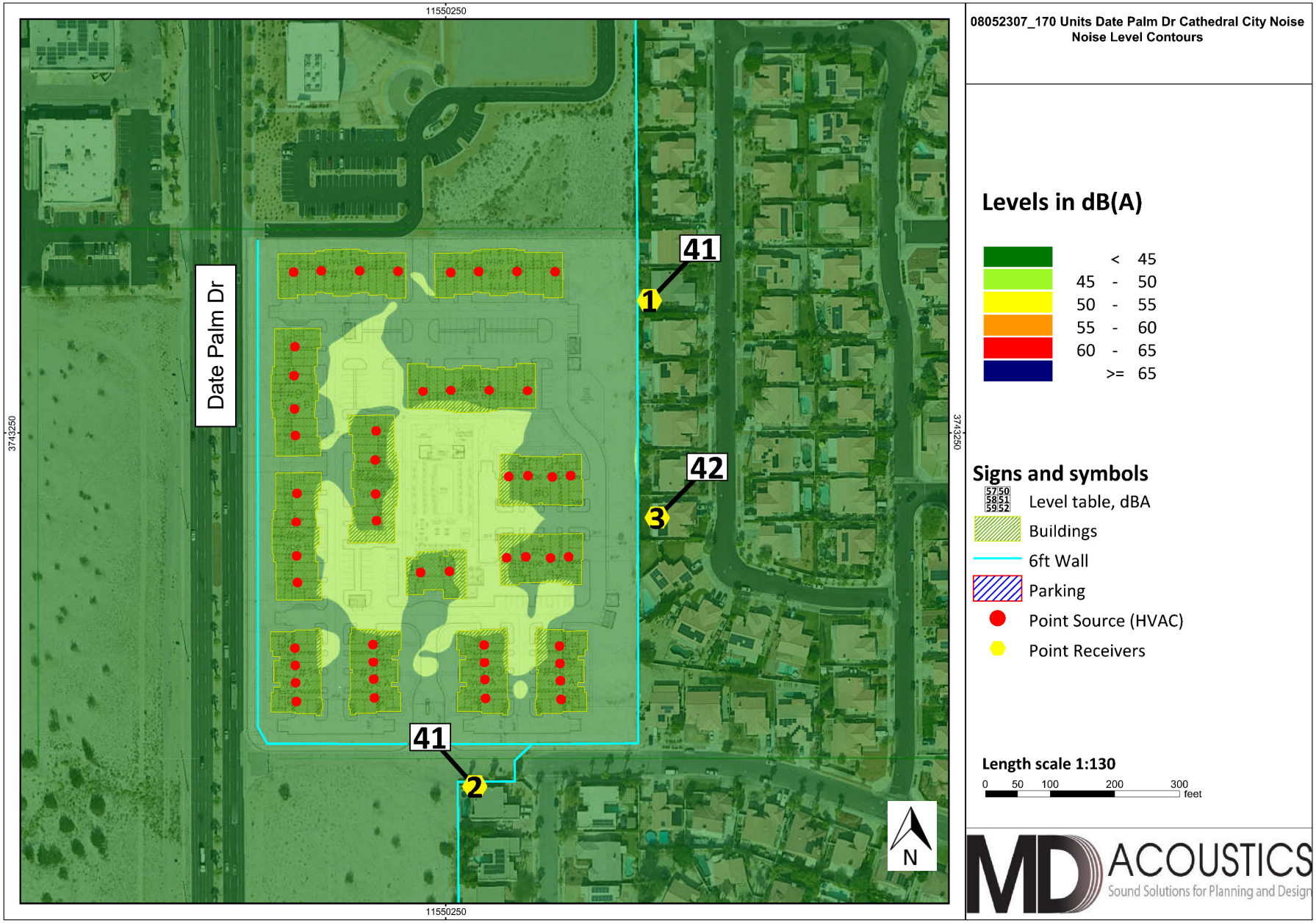


Table 5: Worst-case Predicted Operational Noise Level[1]

Receptor[1]	Floor	Existing Ambient Noise Level (dBA, Leq)[2]	Project Noise Level (dBA, Leq)[3]	Total Combined Noise Level (dBA, Leq)	Daytime (7AM - 10PM) Stationary Noise Limit Exterior (dBA, Leq)[4]	Exceeds Exterior Standard	Change in Noise Level as Result of Project
1	1	56	41	56	**65**	No	0.0
2	1	58	42	58	**65**	No	0.0
3	1	56	41	56	**65**	No	0.0

Notes:
1. Receptor 1 - 3 represents residential uses.
2. The ambient noise condition was estimated using the FHWA TNM based on receiver distance to Date Palm Dr and calibrated to the noise measurement performed at the project site. See Appendix A for noise measurement and Appendix B for traffic noise calculation sheets.
3. See Exhibit F for the operational noise level projections at said receptors.
4. Per Section 11.96.030 from the City's Municipal Code.

As shown in Table 5, the project does not exceed the City's exterior noise limit. The project was compared to the existing baseline condition (estimated at receiver location based on the measurement performed) to the operational plus ambient noise condition to show the change in noise level. Table 5 provides the anticipated change in noise level as a result of the proposed project. The existing noise levels are anticipated to have a negligible increase at the receptor locations analyzed.

When comparing the change in noise level to acoustic characteristics outlined within Table 1 (Section 2.5 of this report), the noise level increase would be "Not Perceptible" at the receptors.

7.1.2 Noise Impacts to Off-Site Receptors Due to Project Generated Traffic

A worst-case project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at two locations. The first one represents the residences close to the south edge of the project site, and is approximately 400 feet from the centerline of Date Palm Drive. The second location represents the residences to the east of the project site and is 670 feet from the centerline of Date Palm Drive. Additionally at the first location the impact is analyzed from the Rosemont Avenue opening. The trip generation for the multi-family residence project is 1,375, distributed 100% on Date Palm Drive for conservative purposes. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in with and without project conditions. In addition, the noise contours for 60, 65 and 70 dBA CNEL were calculated. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Opening Year (without Project): This scenario refers to opening year 2025 traffic noise conditions.

Opening Year (Plus Project): This scenario refers to opening year + project traffic noise conditions.

Table 6 compares the without and with project scenario and shows the change in traffic noise levels as a result of the proposed project. It takes a change of 3 dB or more to hear a perceptible difference. As demonstrated in Table 6, the project is anticipated to generate a small change in the noise CNEL level.

The change in noise level is less than significant as a 0.4 dBA noise increase is projected. No further mitigation is required.

Table 6: Existing Scenario - Noise Levels Along Roadways (dBA CNEL)
Opening Without Project Exterior Noise Levels

Roadway	Segment	CNEL (dBA)	Distance to Contour (Ft)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Date Palm Dr	30th Ave to Mccallum Way (@400')	58.7	79	249	788	2492
Date Palm Dr	30th Ave to Mccallum Way (@670')	56.4	78	247	783	2475
Rosemont Ave	Date Palm to Sierra (@50')	61.0	13	42	132	417

Opening With Project Exterior Noise Levels

Roadway	Segment	CNEL (dBA)	Distance to Contour (Ft)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Date Palm Dr	30th Ave to Mccallum Way (@400')	58.9	83	263	831	2626
Date Palm Dr	30th Ave to Mccallum Way (@670')	56.7	82	261	825	2608
Rosemont Ave	Date Palm to Sierra (@50')	61.4	14	46	144	456

Change in Existing Noise Levels as a Result of Project

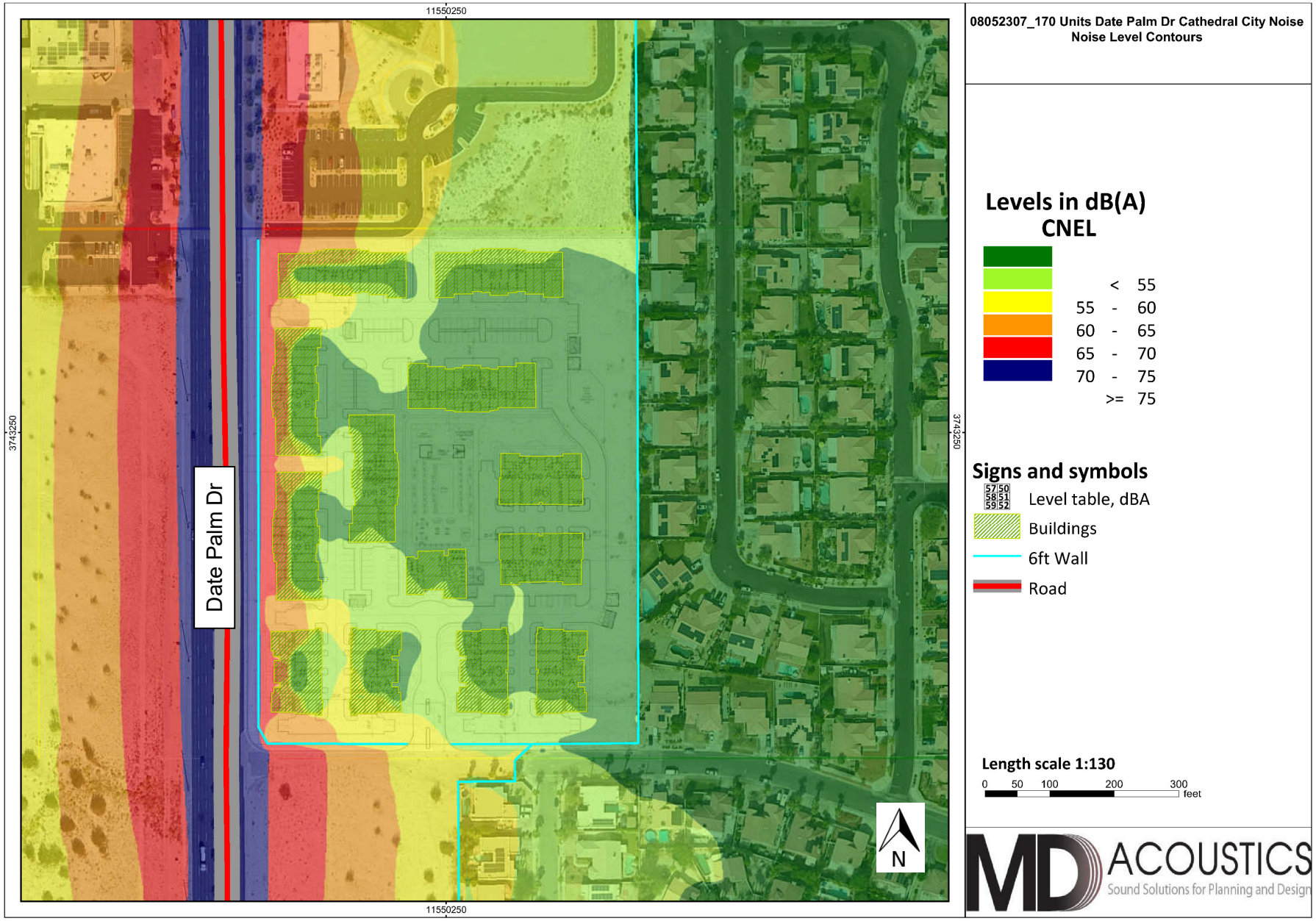
Roadway	Segment	CNEL at locations dBA[1,2]			
		Existing Without Project	Existing With Project	Change in Noise Level	Potential Significant Impact
Date Palm Dr	30th Ave to Mccallum Way (@400')	58.7	58.9	0.2	No
Date Palm Dr	30th Ave to Mccallum Way (@670')	56.4	56.7	0.3	No
Rosemont Ave	Date Palm to Sierra (@50')	61.0	61.4	0.4	No

Notes:
[1] Exterior noise levels calculated at 5 feet above ground level.
[2] Noise levels calculated from centerline of subject roadway.

7.1.3 Noise Impacts to On-Site Receptors Due to Traffic

Traffic noise from the local roadway network was evaluated and compared to the City's noise compatibility matrix. Per the City's Land Use Compatibility (Table V-2 from Geneal Plan / Noise Element), multi-family residential is conditionally acceptable up to 70 dBA CNEL. Opening Plus Project traffic noise projections show that the traffic noise contour for 70 dBA CNEL will reach up to 88 feet from the Date Palm centerline. The proposed residential structures are located as close as 85 feet away from Date Palm Drive centerline and fall within the 70 to 65 dBA CNEL contour of the Roadway and are located within the conditionally acceptable region for multiple-family residential (per land use compatibility matrix).

Exhibit G
Traffic Noise Levels Contours CNEL



7.1.4 Interior Noise Levels

The future interior noise level was calculated for the sensitive receptor locations using a typical "windows open" and "windows closed" condition. A "windows open" condition assumes 12 dBA of noise attenuation from the exterior noise level. A "windows closed" condition" assumes 20 dBA of noise attenuation from the exterior noise level. Table 7 indicates the first and second-floor interior noise levels for the project site.

Table 7: Future Interior Noise Levels (dBA CNEL)

Location	Roadway Noise Source	Exterior Facade Study Location	Noise Level at Building Facade[1]	Interior Noise Reduction Required to Meet Interior Noise Standard of 45 dBA CNEL	Interior Noise Level w/ Typical Residential Windows (STC≥ 30)		STC Rating for Windows Facing Subject Roadway[4]
					Window Open[2]	Windows Closed[3]	
1st Row Units Along Western Property Line	Date Palm Dr	1st Floor	70	25	58	45	30
		2nd Floor	70	25	58	45	30

Notes:
1. Noise level from Section 7.1 and from worksheets Appendix B.
2. A minimum of 12 dBA noise reduction is assumed with a "windows open" condition.
3. A minimum of 20 dBA noise reduction is assumed with a "windows closed" condition.
4. Indicates the required STC rating to meet the interior noise standard.

As shown in Table 7, the interior noise level will be 58 dBA CNEL with the windows open and 45 dBA CNEL with the windows closed.

To meet the interior 45 dBA CNEL standard a "windows closed" condition is required. The windows and sliding glass doors directly facing Date Palm Drive will require a minimum STC rating of 30 for the 1st floor and 2nd floors. A "windows closed" condition simply means that in order to achieve a 45 dBA CNEL interior noise level, the windows must be closed and does not mean the windows must be fixed.

The present project is designed to meet the Title 24 CBC; therefore, the construction assembly and techniques shall suffice to meet the interior noise isolation requirements.

7.2 Summary of Recommendations

The following recommendations are provided:

COA-1: Consistent with the Land Use Compatibility Matrix and prior to issuance of grading permit, a detailed sound attenuation study is necessary to verify the project will achieve a minimum 25 dBA noise reduction.

8.0 Construction Noise Impact

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction.

8.1 Construction Noise

The Environmental Protection Agency (EPA) has compiled data regarding the noise-generated characteristics of typical construction activities. The data is presented in Table 8.

Table 8: Typical Construction Noise Levels[1]

Equipment Powered by Internal Combustion Engines

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

Impact Equipment

Type	Noise Levels (dBA) at 50 Feet
Saws	71 - 82
Vibrators	68 - 82

Notes:
[1] Referenced Noise Levels from the Environmental Protection Agency (EPA)

Construction noise is considered a short-term impact and would be considered significant if construction activities are taken outside the allowable times as described in the City's Municipal Code (Section 11.96.070). Construction is anticipated to occur during the permissible hours according to the City's Municipal Code. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing within the project vicinity. Furthermore, noise reduction measures are provided to further reduce construction noise. The impact is considered not significant however construction noise level projections are provided.

Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels will be loudest during grading phase. A likely worst-case construction noise scenario during grading assumes the use of a grader, a dozer, and two (2) excavators, two (2) backhoes and a scraper operating at 320 feet from the nearest sensitive receptor (residences to the east).

Assuming a usage factor of 40 percent for each piece of equipment, unmitigated noise levels at 290 feet have the potential to reach 69 dBA L_{eq} and 73 dBA L_{max} at the nearest sensitive receptors during grading. Noise levels for the other construction phases would be lower and range between 62 to 65 dBA.

8.2 Construction Vibration

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary vibration source during construction may be from a bull dozer. A large bull dozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is perceptible but below any risk to architectural damage.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (100/D_{rec})^n$$

Where: PPV_{ref} *= reference PPV at 100ft.*
D_{rec} *= distance from equipment to receiver in ft.*
n = 1.1 (the value related to the attenuation rate through ground)

The thresholds from the Caltrans Transportation and Construction Induced Vibration Guidance Manual in Table 9 (below) provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 9: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Table 19, Transportation and Construction Vibration Guidance Manual, Caltrans, Sept. 2013.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 10 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 10: Vibration Source Levels for Construction Equipment[1]

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

[1] Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

At a distance of 320 feet, a large bulldozer would yield a worst-case 0.005 PPV (in/sec) which below the threshold of perception and any risk of damage. The impact is less than significant, and no mitigation is required.

8.3 Construction Noise Reduction Measures

Construction operations must follow the City's General Plan and the Noise Ordinance, which states that construction, repair or excavation work performed must occur within the permissible hours. To further ensure that construction activities do not disrupt the adjacent land uses, the following measures should be taken:

1. Construction should occur during the permissible hours as defined in Section 11.96.070.

2. During construction, the contactor shall ensure all construction equipment is equipped with appropriate noise attenuating devices.

3. The contractor should locate equipment staging areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

4. Idling equipment should be turned off when not in use.

5. Equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.

9.0 References

State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

City of Cathedral City: Municipal Code Chapter 11.96

City of Cathedral City: General Plan Chapter V - Environmental Hazards - Noise Element.

Federal Transit Administration. Transit Noise and Vibration Impact Assessment Manual. September 2018.

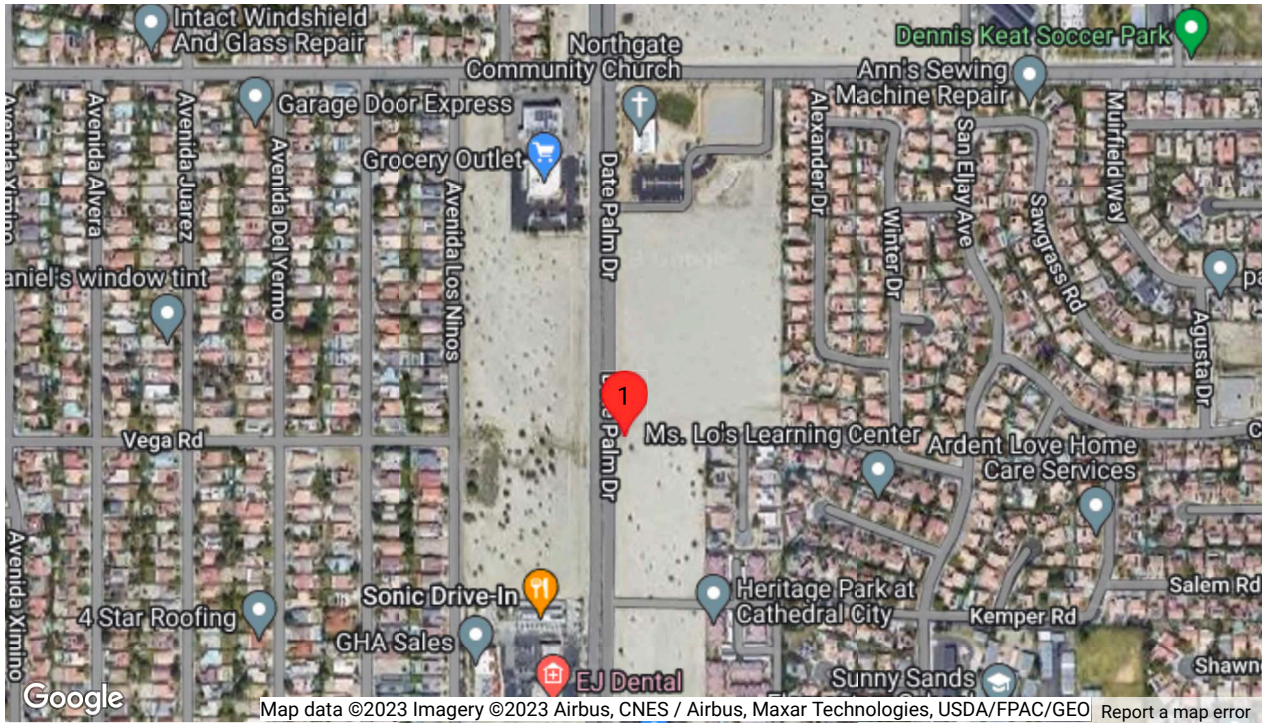
Scoping Agreement for Date Palm Apartments Project, Cathedral City, Integrated Engineering Group, September 22, 2023.

Appendix A:

Field Measurement Data

1-Hour Noise Measurement Datasheet

Project Name:	170 Units Date Palm Dr Noise		**Site Observations:**
Project: #/Name:	0805-2023-007		
Site Address/Location:	Date Palm Drive & Rosemount		
Date:	09/26/2023		
Field Tech/Engineer:			
Sound Meter:	XL2, NTI	**SN:** A2A-08562-E0	
Settings:	A-weighted, slow, 1-sec, 1-hour interval		
Site Id:	NM1		



MD ACOUSTICS

Source: Global Forecast System (GFS) weather forcast model

1-Hour Noise Measurement Datasheet - Cont.

Project Name: 170 Units Date Palm Dr Noise

Site Address/Location: Date Palm Drive & Rosemount

Site Id: NM1

Figure 1: NM1

Figure 2: NM1

Figure 3: NM1

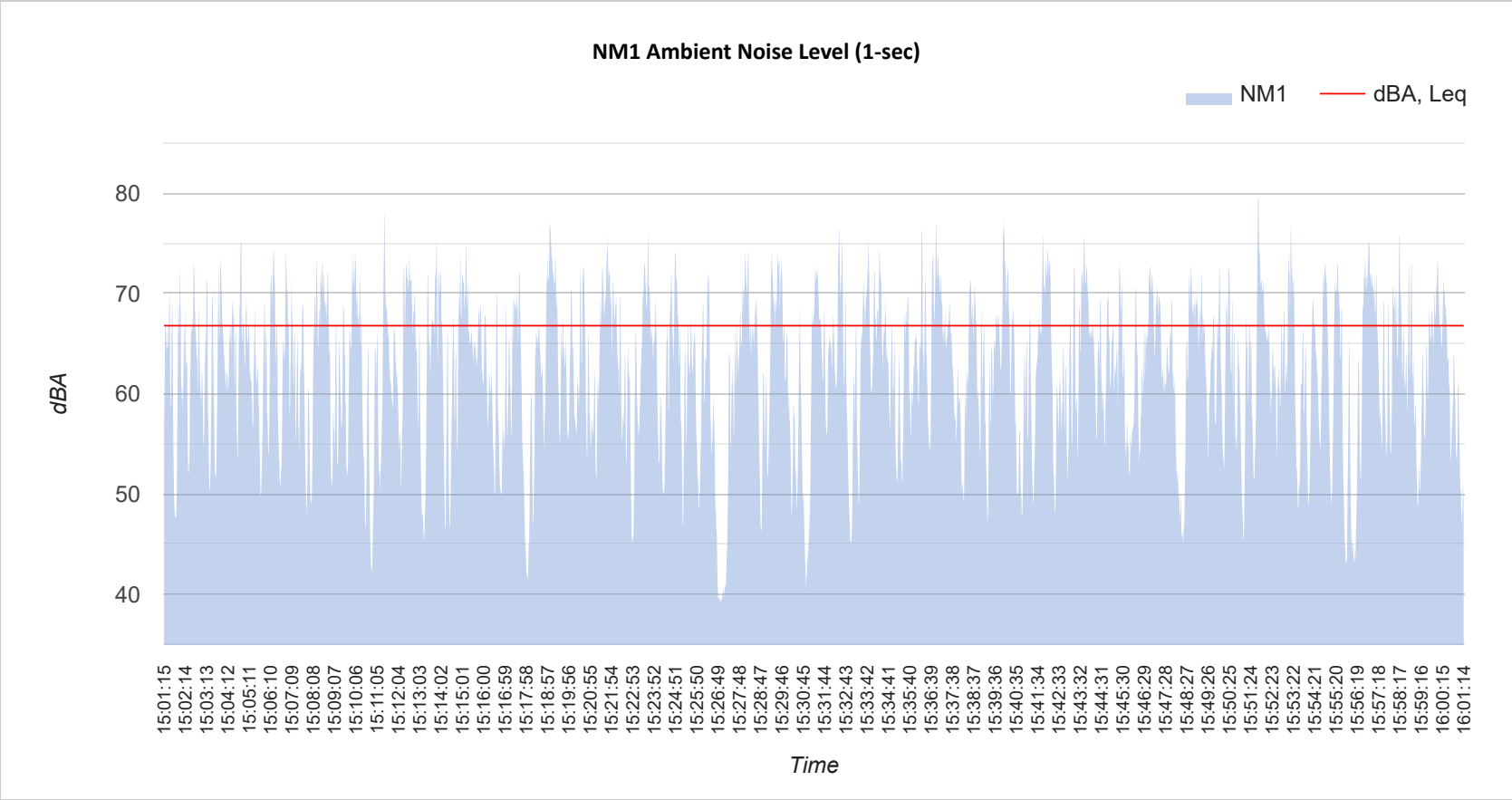
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
NM1	3:01 PM	4:01 PM	66.8	79.3	39.1	74.1	71.8	67.8	63.5	51.5

MD ACOUSTICS

1-Hour Noise Measurement Datasheet - Cont.

Project Name:	170 Units Date Palm Dr Noise	**Site Topo:**	Flat desert conditions next to h	**Noise Source(s) w/ Distance:**
Site Address/Location:	Date Palm Drive & Rosemount	**Meteorological Cond.:**	92F winds 0-1 MPH	Road and residential noise
Site Id:	NM1	**Ground Type:**	Sandy soil and clay	



MD ACOUSTICS

Appendix B:

Traffic FHWA Worksheets

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Date Palm Apartments	JOB #:	0805-23-07
ROADWAY:	Date Palm Drive, between 30th Ave and Mccallum Way	DATE:	18-Oct-23
LOCATION:	400 ft from Date Palm Dr centerline	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA Opening Year 2025

ROADWAY CONDITIONS

ADT =	25,409	
SPEED =	45	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	64	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	2,541	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		400
DIST C/L TO WALL =		70
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		330
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.814	0.104	0.082	0.9605
MEDIUM TRUCK	0.867	0.053	0.080	0.0265
HEAVY TRUCKS	0.892	0.034	0.073	0.0130

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	392.39	- -
MEDIUM TRUCKS	4.0	392.29	- -
HEAVY TRUCKS	8.0	398.73	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.4	60.7	57.8	52.0	61.0	61.5
MEDIUM TRUCKS	55.1	53.6	47.5	44.5	53.6	53.9
HEAVY TRUCKS	56.4	55.1	47.0	45.5	54.8	55.0
NOISE LEVELS (dBA)	63.9	62.4	58.5	53.4	62.5	62.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	56.4	54.7	51.8	46.0	55.0	55.5
MEDIUM TRUCKS	49.9	48.4	42.3	39.3	48.4	48.7
HEAVY TRUCKS	56.4	55.1	47.0	45.5	54.8	55.0
NOISE LEVELS (dBA)	59.7	58.1	54.2	49.2	58.3	58.7

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	79	249	788	2492
LDN	71	225	712	2251

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Date Palm Apartments	JOB #:	0805-23-07
ROADWAY:	Date Palm Drive, between 30th Ave and Mccallum Way	DATE:	18-Oct-23
LOCATION:	400 ft from Date Palm Dr centerline	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA Opening Year 2025 + Project

ROADWAY CONDITIONS

ADT =	26,784	
SPEED =	45	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	64	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	2,678	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		400
DIST C/L TO WALL =		70
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		330
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.814	0.104	0.082	0.9605
MEDIUM TRUCK	0.867	0.053	0.080	0.0265
HEAVY TRUCKS	0.892	0.034	0.073	0.0130

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	392.39	- -
MEDIUM TRUCKS	4.0	392.29	- -
HEAVY TRUCKS	8.0	398.73	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.6	60.9	58.0	52.2	61.2	61.7
MEDIUM TRUCKS	55.3	53.9	47.8	44.8	53.8	54.1
HEAVY TRUCKS	56.6	55.3	47.2	45.7	55.0	55.2
NOISE LEVELS (dBA)	64.2	62.6	58.7	53.7	62.7	63.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	56.6	54.9	52.0	46.2	55.2	55.7
MEDIUM TRUCKS	50.1	48.7	42.6	39.6	48.6	48.9
HEAVY TRUCKS	56.6	55.3	47.2	45.7	55.0	55.2
NOISE LEVELS (dBA)	59.9	58.4	54.5	49.4	58.5	58.9

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	83	263	831	2626
LDN	75	237	750	2373

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Date Palm Apartments	JOB #:	0805-23-07
ROADWAY:	Date Palm Drive, between 30th Ave and Mccallum Way	DATE:	18-Oct-23
LOCATION:	670 ft from Date Palm Dr centerline	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA Opening Year 2025

ROADWAY CONDITIONS

ADT =	25,409	
SPEED =	45	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	64	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	2,541	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		670
DIST C/L TO WALL =		70
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		600
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.814	0.104	0.082	0.9605
MEDIUM TRUCK	0.867	0.053	0.080	0.0265
HEAVY TRUCKS	0.892	0.034	0.073	0.0130

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	662.39	- -
MEDIUM TRUCKS	4.0	662.29	- -
HEAVY TRUCKS	8.0	669.24	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.1	58.4	55.5	49.7	58.7	59.2
MEDIUM TRUCKS	52.8	51.4	45.2	42.3	51.3	51.6
HEAVY TRUCKS	54.2	52.9	44.7	43.2	52.5	52.7
NOISE LEVELS (dBA)	61.7	60.1	56.2	51.2	60.2	60.7

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.1	52.4	49.5	43.7	52.7	53.2
MEDIUM TRUCKS	47.6	46.2	40.0	37.1	46.1	46.4
HEAVY TRUCKS	54.2	52.9	44.7	43.2	52.5	52.7
NOISE LEVELS (dBA)	57.5	55.9	52.0	46.9	56.0	56.4

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	78	247	783	2475
LDN	71	224	707	2236

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Date Palm Apartments	JOB #:	0805-23-07
ROADWAY:	Date Palm Drive, between 30th Ave and Mccallum Way	DATE:	18-Oct-23
LOCATION:	670 ft from Date Palm Dr centerline	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA Opening Year 2025 + Project

ROADWAY CONDITIONS

ADT =	26,784	
SPEED =	45	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	64	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	2,678	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		670
DIST C/L TO WALL =		70
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		600
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.814	0.104	0.082	0.9605
MEDIUM TRUCK	0.867	0.053	0.080	0.0265
HEAVY TRUCKS	0.892	0.034	0.073	0.0130

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	662.39	- -
MEDIUM TRUCKS	4.0	662.29	- -
HEAVY TRUCKS	8.0	669.24	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.3	58.6	55.7	49.9	58.9	59.4
MEDIUM TRUCKS	53.0	51.6	45.5	42.5	51.6	51.8
HEAVY TRUCKS	54.4	53.1	44.9	43.5	52.8	53.0
NOISE LEVELS (dBA)	61.9	60.3	56.4	51.4	60.5	60.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.3	52.6	49.7	43.9	52.9	53.4
MEDIUM TRUCKS	47.8	46.4	40.3	37.3	46.4	46.6
HEAVY TRUCKS	54.4	53.1	44.9	43.5	52.8	53.0
NOISE LEVELS (dBA)	57.7	56.1	52.2	47.2	56.2	56.7

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	82	261	825	2608
LDN	75	236	745	2357

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Date Palm Apartments	JOB #:	0805-23-07
ROADWAY:	Date Palm Drive, between 30th Ave and Mccallum Way	DATE:	18-Oct-23
LOCATION:	85 ft from Date Palm Dr centerline Project First Row	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA Opening Year 2025 + Project

ROADWAY CONDITIONS

ADT =	26,784	
SPEED =	45	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	64	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	2,678	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		85
DIST C/L TO WALL =		63
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		22
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.814	0.104	0.082	0.9605
MEDIUM TRUCK	0.867	0.053	0.080	0.0265
HEAVY TRUCKS	0.892	0.034	0.073	0.0130

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	76.44	- -
MEDIUM TRUCKS	4.0	76.33	- -
HEAVY TRUCKS	8.0	76.33	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.7	68.0	65.1	59.3	68.3	68.8
MEDIUM TRUCKS	62.4	61.0	54.9	51.9	60.9	61.2
HEAVY TRUCKS	63.8	62.5	54.4	52.9	62.2	62.4
NOISE LEVELS (dBA)	71.3	69.7	65.8	60.8	69.8	70.3

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.8	62.1	59.2	53.4	62.4	62.9
MEDIUM TRUCKS	57.0	55.6	49.5	46.5	55.5	55.8
HEAVY TRUCKS	58.9	57.6	49.4	47.9	57.2	57.4
NOISE LEVELS (dBA)	65.6	64.0	60.1	55.1	64.2	64.6

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	91	287	909	2874
LDN	82	260	821	2597

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Date Palm Apartments	JOB #:	0805-23-07
ROADWAY:	Date Palm Drive, between 30th Ave and Mccallum Way	DATE:	18-Oct-23
LOCATION:	50 ft from Rosemont Ave centerline Residence to the south of project site	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA Opening Year 2025

ROADWAY CONDITIONS

ADT =	15,000	
SPEED =	25	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	24	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,500	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		25
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		25
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.814	0.104	0.082	0.9605
MEDIUM TRUCK	0.867	0.053	0.080	0.0265
HEAVY TRUCKS	0.892	0.034	0.073	0.0130

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	47.31	- -
MEDIUM TRUCKS	4.0	47.04	- -
HEAVY TRUCKS	8.0	48.63	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.9	60.2	57.3	51.5	60.5	61.0
MEDIUM TRUCKS	58.0	56.6	50.5	47.5	56.5	56.8
HEAVY TRUCKS	60.9	59.6	51.5	50.0	59.3	59.5
NOISE LEVELS (dBA)	65.3	63.8	59.0	54.7	63.8	64.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.8	53.1	50.2	44.4	53.4	53.9
MEDIUM TRUCKS	52.2	50.8	44.7	41.7	50.7	51.0
HEAVY TRUCKS	60.9	59.6	51.5	50.0	59.3	59.5
NOISE LEVELS (dBA)	62.1	60.6	55.8	51.5	60.6	61.0

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	42	132	417
LDN	12	38	121	384

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Date Palm Apartments	JOB #:	0805-23-07
ROADWAY:	Date Palm Drive, between 30th Ave and Mccallum Way	DATE:	18-Oct-23
LOCATION:	50 ft from Rosemont Ave centerline Residence to the south of project site	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA Opening Year 2025 + Project

ROADWAY CONDITIONS

ADT =	16,375	
SPEED =	25	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	24	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,638	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		25
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		25
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.814	0.104	0.082	0.9605
MEDIUM TRUCK	0.867	0.053	0.080	0.0265
HEAVY TRUCKS	0.892	0.034	0.073	0.0130

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	47.31	- -
MEDIUM TRUCKS	4.0	47.04	- -
HEAVY TRUCKS	8.0	48.63	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.3	60.6	57.7	51.9	60.9	61.4
MEDIUM TRUCKS	58.4	57.0	50.8	47.9	56.9	57.2
HEAVY TRUCKS	61.3	60.0	51.8	50.4	59.7	59.9
NOISE LEVELS (dBA)	65.7	64.2	59.4	55.1	64.2	64.6

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	55.2	53.5	50.6	44.8	53.8	54.3
MEDIUM TRUCKS	52.6	51.2	45.0	42.1	51.1	51.4
HEAVY TRUCKS	61.3	60.0	51.8	50.4	59.7	59.9
NOISE LEVELS (dBA)	62.5	61.0	56.1	51.9	61.0	61.4

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	14	46	144	456
LDN	13	42	132	419

Appendix C:

Construction Noise Modeling Output

Construction Noise Levels at Senstive Receptors by Phase

Activity	Leq at 320 FT (East)	Lmax at 320 FT (East)
Site Preparation	62	66
Grading	69	73
Building Construction	65	69
Architectural Coating	62	66

Equipment Summary	Reference (dBA) 50 ft Lmax
Rock Drills	96
Jack Hammers	82
Pneumatic Tools	85
Pavers	80
Dozers	85
Scrapers	87
Haul Trucks	88
Cranes	82
Portable Generators	80
Rollers	80
Tractors	80
Front-End Loaders	86
Hydraulic Excavators	86
Graders	86
Air Compressors	86
Trucks	86

Site Preparation

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Dozer	85	1	40	320	0.5	0	64.8	60.9	1220703.13
2	Tractor/Loader/Backhoe	80	1	40	320	0.5	0	59.8	55.9	386020.222
							Lmax*	66	Leq	62
							Lw	96	Lw	94

Source: MD Acoustics, LLC - Sept. 2021.
1- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	15.2	0.5	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47
60	18.3	0.5	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45
70	21.3	0.5	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43
80	24.4	0.5	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
90	27.4	0.5	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
100	30.5	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
110	33.5	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
120	36.6	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
130	39.6	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
140	42.7	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
150	45.7	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
160	48.8	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
170	51.8	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
180	54.9	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
190	57.9	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
200	61.0	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
210	64.0	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
220	67.1	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
230	70.1	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
240	73.1	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
250	76.2	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
260	79.2	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
270	82.3	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
280	85.3	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
290	88.4	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
300	91.4	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
310	94.5	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
320	97.5	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
330	100.6	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
340	103.6	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
350	106.7	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
360	109.7	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
370	112.8	0.5	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25

Grading

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Grader	86	1	40	320	0.5	0	65.8	61.9	1536774.18
2	Dozer	85	1	40	320	0.5	0	64.8	60.9	1220703.13
3	Tractor/Backhoe	80	2	40	320	0.5	0	62.9	58.9	772040.444
4	Scrapers	87	1	40	320	0.5	0	66.8	62.9	1934684.07
5	Excavators	86	2	40	320	0.5	0	68.9	64.9	3073548.37
							Lmax*	**73**	**Leq**	**69**
							Lw	**102**	**Lw**	**101**

Source: MD Acoustics, LLC - Sept. 2021.
1- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	15.2	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
60	18.3	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
70	21.3	0.5	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51
80	24.4	0.5	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
90	27.4	0.5	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
100	30.5	0.5	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47
110	33.5	0.5	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46
120	36.6	0.5	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45
130	39.6	0.5	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44
140	42.7	0.5	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43
150	45.7	0.5	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
160	48.8	0.5	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
170	51.8	0.5	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
180	54.9	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
190	57.9	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
200	61.0	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39
210	64.0	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39
220	67.1	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
230	70.1	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
240	73.1	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
250	76.2	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
260	79.2	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
270	82.3	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
280	85.3	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
290	88.4	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
300	91.4	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
310	94.5	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
320	97.5	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
330	100.6	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
340	103.6	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
350	106.7	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
360	109.7	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
370	112.8	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33

Building Construction

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Forklift/Tractor	80	3	40	320	0.5	0	64.6	60.6	1158060.67
2	Tractor/Backhoe	80	3	40	320	0.5	0	64.6	60.6	1158060.67
3	Cranes	82	1	40	320	0.5	0	61.8	57.9	611800.822
4	Generator	80	1	40	320	0.5	0	59.8	55.9	386020.222
							Lmax*	**69**	**Leq**	**65**
							Lw	**101**	**Lw**	**97**

Source: MD Acoustics, LLC - Sept. 2021.
1- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	**15.2**	**0.5**	**65**	**64**	**63**	**62**	**61**	**60**	**59**	**58**	**57**	**56**	**55**	**54**	**53**	**52**	**51**	**50**
60	18.3	0.5	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
70	21.3	0.5	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47
80	24.4	0.5	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45
90	27.4	0.5	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44
100	30.5	0.5	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43
110	33.5	0.5	57	56	55	54	53	52	51	50	49	48	47	46	45	44	**43**	42
120	36.6	0.5	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
130	39.6	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
140	42.7	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39
150	45.7	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
160	48.8	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
170	51.8	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
180	54.9	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
190	57.9	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
200	61.0	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
210	64.0	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
220	67.1	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
230	70.1	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
240	73.1	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
250	76.2	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
260	79.2	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
270	82.3	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
280	85.3	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
290	88.4	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
300	91.4	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
310	94.5	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
320	97.5	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
330	100.6	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
340	103.6	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
350	106.7	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
360	109.7	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
370	112.8	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28

Architectural Coating

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Air Compressor	86	1	40	320	0.5	0	65.8	61.9	1536774.18
							Lmax*	66	Leq	62
							Lw	97	Lw	94

Source: MD Acoustics, LLC - Sept. 2021.
1- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	**15.2**	**0.5**	**62**	**61**	**60**	**59**	**58**	**57**	**56**	**55**	**54**	**53**	**52**	**51**	**50**	**49**	**48**	**47**
60	18.3	0.5	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45
70	21.3	0.5	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43
80	24.4	0.5	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
90	27.4	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
100	30.5	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39
110	33.5	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	**39**	38
120	36.6	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
130	39.6	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
140	42.7	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
150	45.7	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
160	48.8	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
170	51.8	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
180	54.9	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
190	57.9	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
200	61.0	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
210	64.0	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
220	67.1	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
230	70.1	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
240	73.1	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
250	76.2	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
260	79.2	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
270	82.3	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
280	85.3	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
290	88.4	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
300	91.4	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
310	94.5	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
320	97.5	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
330	100.6	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
340	103.6	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
350	106.7	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
360	109.7	0.5	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
370	112.8	0.5	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25

VIBRATION LEVEL IMPACT

Project:	Date Palm Apartments	Date: 10/4/23
Source:	Large Bulldozer	
Scenario:	Unmitigated	
Location:	Project Site	
Address:	Data Palm Drive between 30th Ave and Mccallum Way, Cathedral City CA	

PPV = PPVref(25/D)^n (in/sec)

DATA INPUT

Equipment = Type	2	Large Bulldozer	INPUT SECTION IN BLUE
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	320.00	Distance from Equipment to Receiver (ft)	
n =	1.10	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

DATA OUT RESULTS

PPV =	**0.005**	IN/SEC	OUTPUT IN RED

Appendix D:

SoundPLAN Noise Modeling Inputs/Outputs and Noise Reference Levels

170 Units Date Palm Dr Cathedral City Noise
Octave spectra of the sources in dB(A) - 001 - Date Palm Apartments: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Parking	PLot	89.91			55.9	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	93.80			55.7	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	92.84			55.8	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	94.28			55.7	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	101.92			55.4	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	101.39			55.4	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	29.01			55.4	70.0	0.0	0.0		0	33	Typical spectrum	53.4	65.0	57.5	62.0	62.1	62.5	59.8	53.6	40.8
Parking	PLot	69.28			55.6	74.0	0.0	0.0		0	33	Typical spectrum	57.3	68.9	61.4	65.9	66.0	66.4	63.7	57.5	44.7
Parking	PLot	125.73			55.5	76.5	0.0	0.0		0	33	Typical spectrum	59.9	71.5	64.0	68.5	68.6	69.0	66.3	60.1	47.3
Parking	PLot	123.76			55.1	76.0	0.0	0.0		0	33	Typical spectrum	59.4	71.0	63.5	68.0	68.1	68.5	65.8	59.6	46.8
Parking	PLot	95.07			55.7	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	28.89			55.4	70.0	0.0	0.0		0	33	Typical spectrum	53.4	65.0	57.5	62.0	62.1	62.5	59.8	53.6	40.8
Parking	PLot	26.14			55.8	70.0	0.0	0.0		0	33	Typical spectrum	53.4	65.0	57.5	62.0	62.1	62.5	59.8	53.6	40.8
Parking	PLot	27.99			55.5	70.0	0.0	0.0		0	33	Typical spectrum	53.4	65.0	57.5	62.0	62.1	62.5	59.8	53.6	40.8
Parking	PLot	26.13			55.8	70.0	0.0	0.0		0	33	Typical spectrum	53.4	65.0	57.5	62.0	62.1	62.5	59.8	53.6	40.8
Parking	PLot	26.91			55.7	70.0	0.0	0.0		0	33	Typical spectrum	53.4	65.0	57.5	62.0	62.1	62.5	59.8	53.6	40.8
Parking	PLot	97.76			54.9	74.8	0.0	0.0		0	33	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking	PLot	91.86			55.8	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	112.45			54.9	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	100.15			55.4	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	97.77			55.5	75.5	0.0	0.0		0	33	Typical spectrum	58.8	70.4	62.9	67.4	67.5	67.9	65.2	59.0	46.2
Parking	PLot	84.42			55.5	74.8	0.0	0.0		0	33	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2

170 Units Date Palm Dr Cathedral City Noise
Octave spectra of the sources in dB(A) - 001 - Date Palm Apartments: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2

170 Units Date Palm Dr Cathedral City Noise
Octave spectra of the sources in dB(A) - 001 - Date Palm Apartments: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2

170 Units Date Palm Dr Cathedral City Noise
Octave spectra of the sources in dB(A) - 001 - Date Palm Apartments: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2
HVAC	Point				80.2	80.2	0.0	0.0		0	100%/24h	HVAC: 72dB @ 3ft - Carrier 50TFQ0006 - 5	57.3	65.8	68.2	72.5	74.8	74.4	71.4	66.5	54.2

170 Units Date Palm Dr Cathedral City Noise
Contribution level - 001 - Date Palm Apartments: Outdoor SP

Source group	Source type	Tr. lane	Leq,d dB(A)	A dB
Receiver R1 Fl G Lr,lim dB(A) Leq,d 42.0 dB(A)				
Default parking lot noise	PLot		-10.8	0.0
Default parking lot noise	PLot		-6.7	0.0
Default parking lot noise	PLot		-9.5	0.0
Default parking lot noise	PLot		-3.4	0.0
Default parking lot noise	PLot		-4.1	0.0
Default parking lot noise	PLot		9.3	0.0
Default parking lot noise	PLot		1.5	0.0
Default parking lot noise	PLot		6.7	0.0
Default parking lot noise	PLot		10.5	0.0
Default parking lot noise	PLot		11.3	0.0
Default parking lot noise	PLot		14.0	0.0
Default parking lot noise	PLot		13.5	0.0
Default parking lot noise	PLot		11.5	0.0
Default parking lot noise	PLot		17.8	0.0
Default parking lot noise	PLot		17.2	0.0
Default parking lot noise	PLot		20.5	0.0
Default parking lot noise	PLot		20.8	0.0
Default parking lot noise	PLot		25.2	0.0
Default parking lot noise	PLot		23.7	0.0
Default parking lot noise	PLot		24.1	0.0
Default parking lot noise	PLot		26.9	0.0
Default parking lot noise	PLot		11.9	0.0
Default industrial noise	Point		17.8	0.0
Default industrial noise	Point		17.4	0.0
Default industrial noise	Point		17.4	0.0
Default industrial noise	Point		21.2	0.0
Default industrial noise	Point		21.0	0.0
Default industrial noise	Point		25.9	0.0
Default industrial noise	Point		21.4	0.0
Default industrial noise	Point		21.0	0.0
Default industrial noise	Point		16.9	0.0
Default industrial noise	Point		18.6	0.0
Default industrial noise	Point		23.8	0.0
Default industrial noise	Point		25.3	0.0
Default industrial noise	Point		19.2	0.0
Default industrial noise	Point		18.9	0.0
Default industrial noise	Point		18.0	0.0
Default industrial noise	Point		19.1	0.0
Default industrial noise	Point		20.1	0.0
Default industrial noise	Point		17.1	0.0
Default industrial noise	Point		17.1	0.0
Default industrial noise	Point		16.6	0.0
Default industrial noise	Point		20.1	0.0
Default industrial noise	Point		16.6	0.0

Source group	Source type	Tr. lane	Leq,d dB(A)	A dB
Default industrial noise	Point		16.8	0.0
Default industrial noise	Point		16.6	0.0
Default industrial noise	Point		18.4	0.0
Default industrial noise	Point		19.7	0.0
Default industrial noise	Point		17.3	0.0
Default industrial noise	Point		18.8	0.0
Default industrial noise	Point		20.0	0.0
Default industrial noise	Point		17.4	0.0
Default industrial noise	Point		22.6	0.0
Default industrial noise	Point		20.6	0.0
Default industrial noise	Point		17.8	0.0
Default industrial noise	Point		22.6	0.0
Default industrial noise	Point		26.3	0.0
Default industrial noise	Point		26.5	0.0
Default industrial noise	Point		20.0	0.0
Default industrial noise	Point		27.8	0.0
Default industrial noise	Point		28.3	0.0
Default industrial noise	Point		22.0	0.0
Default industrial noise	Point		32.6	0.0
Default industrial noise	Point		35.9	0.0
Default industrial noise	Point		22.5	0.0
Default industrial noise	Point		21.4	0.0
Default industrial noise	Point		26.6	0.0
Default industrial noise	Point		21.9	0.0
Default industrial noise	Point		26.2	0.0
Default industrial noise	Point		25.4	0.0
Default industrial noise	Point		27.1	0.0
Default industrial noise	Point		20.8	0.0
Receiver R3 Fl G Lr,lim dB(A) Leq,d 41.8 dB(A)				
Default parking lot noise	PLot		14.6	0.0
Default parking lot noise	PLot		20.9	0.0
Default parking lot noise	PLot		26.6	0.0
Default parking lot noise	PLot		19.6	0.0
Default parking lot noise	PLot		-0.6	0.0
Default parking lot noise	PLot		13.2	0.0
Default parking lot noise	PLot		14.5	0.0
Default parking lot noise	PLot		13.4	0.0
Default parking lot noise	PLot		16.9	0.0
Default parking lot noise	PLot		18.0	0.0
Default parking lot noise	PLot		0.4	0.0
Default parking lot noise	PLot		-0.3	0.0
Default parking lot noise	PLot		4.7	0.0
Default parking lot noise	PLot		4.1	0.0
Default parking lot noise	PLot		3.3	0.0
Default parking lot noise	PLot		-0.7	0.0

Source group	Source type	Tr. lane	Leq,d dB(A)	A dB
Default parking lot noise	PLot		-1.2	0.0
Default parking lot noise	PLot		1.1	0.0
Default parking lot noise	PLot		-0.5	0.0
Default parking lot noise	PLot		-0.6	0.0
Default parking lot noise	PLot		-0.4	0.0
Default parking lot noise	PLot		2.5	0.0
Default industrial noise	Point		24.0	0.0
Default industrial noise	Point		27.8	0.0
Default industrial noise	Point		27.6	0.0
Default industrial noise	Point		27.6	0.0
Default industrial noise	Point		21.4	0.0
Default industrial noise	Point		22.0	0.0
Default industrial noise	Point		27.3	0.0
Default industrial noise	Point		23.6	0.0
Default industrial noise	Point		20.9	0.0
Default industrial noise	Point		18.1	0.0
Default industrial noise	Point		16.0	0.0
Default industrial noise	Point		10.2	0.0
Default industrial noise	Point		15.9	0.0
Default industrial noise	Point		23.3	0.0
Default industrial noise	Point		27.8	0.0
Default industrial noise	Point		27.8	0.0
Default industrial noise	Point		27.2	0.0
Default industrial noise	Point		24.8	0.0
Default industrial noise	Point		28.5	0.0
Default industrial noise	Point		29.6	0.0
Default industrial noise	Point		28.3	0.0
Default industrial noise	Point		25.6	0.0
Default industrial noise	Point		29.1	0.0
Default industrial noise	Point		32.4	0.0
Default industrial noise	Point		29.7	0.0
Default industrial noise	Point		22.1	0.0
Default industrial noise	Point		20.6	0.0
Default industrial noise	Point		17.5	0.0
Default industrial noise	Point		20.9	0.0
Default industrial noise	Point		19.9	0.0
Default industrial noise	Point		17.0	0.0
Default industrial noise	Point		21.4	0.0
Default industrial noise	Point		19.7	0.0
Default industrial noise	Point		18.5	0.0
Default industrial noise	Point		16.2	0.0
Default industrial noise	Point		14.6	0.0
Default industrial noise	Point		15.6	0.0
Default industrial noise	Point		15.9	0.0
Default industrial noise	Point		11.7	0.0

Source group	Source type	Tr. lane	Leq,d dB(A)	A dB	
Default industrial noise	Point		13.0	0.0	
Default industrial noise	Point		13.6	0.0	
Default industrial noise	Point		10.3	0.0	
Default industrial noise	Point		10.9	0.0	
Default industrial noise	Point		23.2	0.0	
Default industrial noise	Point		19.8	0.0	
Default industrial noise	Point		23.6	0.0	
Default industrial noise	Point		18.1	0.0	
Default industrial noise	Point		23.6	0.0	
Default industrial noise	Point		18.6	0.0	
Default industrial noise	Point		24.8	0.0	
Receiver R3 Fl G Lr,lim dB(A) Leq,d 42.5 dB(A)					
Default parking lot noise	PLot		-7.7	0.0	
Default parking lot noise	PLot		-1.8	0.0	
Default parking lot noise	PLot		-4.0	0.0	
Default parking lot noise	PLot		4.5	0.0	
Default parking lot noise	PLot		-1.4	0.0	
Default parking lot noise	PLot		20.6	0.0	
Default parking lot noise	PLot		16.2	0.0	
Default parking lot noise	PLot		10.4	0.0	
Default parking lot noise	PLot		9.9	0.0	
Default parking lot noise	PLot		8.1	0.0	
Default parking lot noise	PLot		5.3	0.0	
Default parking lot noise	PLot		5.1	0.0	
Default parking lot noise	PLot		4.1	0.0	
Default parking lot noise	PLot		4.3	0.0	
Default parking lot noise	PLot		5.6	0.0	
Default parking lot noise	PLot		11.9	0.0	
Default parking lot noise	PLot		12.6	0.0	
Default parking lot noise	PLot		21.4	0.0	
Default parking lot noise	PLot		18.0	0.0	
Default parking lot noise	PLot		18.0	0.0	
Default parking lot noise	PLot		17.2	0.0	
Default parking lot noise	PLot		2.1	0.0	
Default industrial noise	Point		16.1	0.0	
Default industrial noise	Point		17.9	0.0	
Default industrial noise	Point		25.3	0.0	
Default industrial noise	Point		26.2	0.0	
Default industrial noise	Point		25.4	0.0	
Default industrial noise	Point		26.0	0.0	
Default industrial noise	Point		20.6	0.0	
Default industrial noise	Point		24.8	0.0	
Default industrial noise	Point		18.1	0.0	
Default industrial noise	Point		17.5	0.0	
Default industrial noise	Point		20.0	0.0	

Source group	Source type	Tr. lane	Leq,d dB(A)	A dB
Default industrial noise	Point		22.6	0.0
Default industrial noise	Point		15.9	0.0
Default industrial noise	Point		16.2	0.0
Default industrial noise	Point		19.0	0.0
Default industrial noise	Point		25.7	0.0
Default industrial noise	Point		30.1	0.0
Default industrial noise	Point		16.1	0.0
Default industrial noise	Point		17.8	0.0
Default industrial noise	Point		24.3	0.0
Default industrial noise	Point		25.3	0.0
Default industrial noise	Point		16.2	0.0
Default industrial noise	Point		17.7	0.0
Default industrial noise	Point		23.8	0.0
Default industrial noise	Point		26.2	0.0
Default industrial noise	Point		26.1	0.0
Default industrial noise	Point		23.1	0.0
Default industrial noise	Point		16.8	0.0
Default industrial noise	Point		20.1	0.0
Default industrial noise	Point		19.1	0.0
Default industrial noise	Point		16.4	0.0
Default industrial noise	Point		18.8	0.0
Default industrial noise	Point		19.8	0.0
Default industrial noise	Point		16.3	0.0
Default industrial noise	Point		21.5	0.0
Default industrial noise	Point		24.1	0.0
Default industrial noise	Point		16.4	0.0
Default industrial noise	Point		24.5	0.0
Default industrial noise	Point		22.5	0.0
Default industrial noise	Point		17.1	0.0
Default industrial noise	Point		30.0	0.0
Default industrial noise	Point		25.7	0.0
Default industrial noise	Point		19.1	0.0
Default industrial noise	Point		27.2	0.0
Default industrial noise	Point		27.5	0.0
Default industrial noise	Point		30.0	0.0
Default industrial noise	Point		30.1	0.0
Default industrial noise	Point		34.1	0.0
Default industrial noise	Point		34.1	0.0
Default industrial noise	Point		22.5	0.0

170 Units Date Palm Dr Cathedral City Noise
Contribution spectra - 001 - Date Palm Apartments: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Receiver R1 Fl G Lr,lim dB(A) Leq,d 42.0 dB(A)																															
Leq,d	20.5					4.4			15.9			2.1			8.4			13.4			14.7			9.8			-4.2			-39.5	
Leq,d	17.2					2.3			13.1			-1.3			5.2			10.1			11.0			5.8			-11.0			-55.1	
Leq,d	17.8					2.2			13.0			-1.3			6.4			11.3			11.6			6.9			-10.5			-54.9	
Leq,d	11.5					-1.3			5.0			-8.6			-1.5			4.2			7.6			0.2			-22.4			-74.8	
Leq,d	13.5					0.3			8.2			-4.9			1.0			7.5			8.0			1.1			-19.4			-69.0	
Leq,d	20.8					4.3			15.8			2.0			8.2			14.3			15.1			10.2			-3.9			-39.2	
Leq,d	11.9					-3.2			6.6			-6.5			-0.4			6.0			6.3			0.7			-15.5			-56.3	
Leq,d	26.9					10.4			22.5			10.9			16.6			19.6			20.2			16.6			7.2			-14.8	
Leq,d	24.1					7.9			19.8			6.7			12.9			17.0			17.6			13.3			1.5			-27.1	
Leq,d	23.7					7.6			19.4			6.4			12.6			16.5			17.1			12.9			1.3			-27.0	
Leq,d	25.2					6.7			20.3			7.9			14.4			18.6			19.2			14.9			2.8			-26.3	
Leq,d	-4.1					-12.2			-7.9			-15.2			-12.7			-13.5			-14.6			-24.8			-47.2				
Leq,d	-3.4					-10.2			-5.3			-19.8			-17.4			-16.5			-18.0			-27.2			-52.5				
Leq,d	-9.5					-16.9			-12.6			-23.6			-22.2			-18.0			-20.3			-30.1			-56.6				
Leq,d	-6.7					-14.8			-9.4			-19.2			-17.0			-18.6			-17.6			-28.4			-57.1				
Leq,d	-10.8					-17.3			-13.2			-23.8			-22.4			-24.6			-25.4			-34.7			-63.9				
Leq,d	9.3					-4.1			1.3			-12.5			-4.5			3.9			5.2			-2.0			-23.9			-81.1	
Leq,d	14.0					0.6			8.8			-2.9			1.6			7.9			8.4			1.4			-19.0			-69.8	
Leq,d	11.3					-1.7			6.6			-6.8			-0.9			5.1			5.3			-1.4			-22.9			-78.9	
Leq,d	10.5					-2.1			6.3			-7.2			-0.8			3.7			3.9			-2.8			-25.1			-84.7	
Leq,d	6.7					-3.1			3.4			-10.0			-4.5			-1.4			-1.4			-9.7			-33.0			-94.5	
Leq,d	1.5					-6.9			-2.2			-14.3			-9.0			-6.9			-6.6			-16.1			-40.1			-93.9	
Leq,d	22.6	-30.7	-24.7	-20.7	-7.7	-2.7	-8.7	-0.6	1.4	0.3	2.4	2.5	4.6	5.7	6.9	11.0	13.2	9.6	12.2	14.4	14.3	14.5	10.2	9.3	4.3	-0.4	-12.3	-27.4	-43.3	-65.8	-94.7
Leq,d	17.8	-31.8	-25.8	-21.8	-8.8	-3.8	-9.8	-1.8	0.1	-1.0	1.0	1.0	2.9	3.8	4.8	8.6	10.3	6.1	7.8	8.8	6.1	6.2	1.6	0.4	-5.1	-10.4	-23.3	-39.6	-57.4	-82.4	
Leq,d	20.6	-29.3	-23.3	-19.3	-6.3	-1.4	-7.4	0.6	2.6	1.5	3.5	3.5	5.4	6.4	7.3	11.2	13.0	8.8	10.6	11.6	9.1	9.4	5.3	4.6	-0.1	-4.1	-15.0	-28.6	-42.5	-62.4	-88.0
Leq,d	20.0	-28.2	-22.3	-18.5	-5.7	-0.9	-7.1	0.7	2.5	1.3	2.9	2.8	4.7	5.6	6.4	10.2	11.9	7.5	9.2	10.0	10.2	10.4	6.1	5.2	0.3	-4.1	-15.6	-29.9	-44.8	-66.7	-95.3
Leq,d	26.5	-22.5	-16.7	-12.9	-0.1	4.7	-1.5	6.3	8.1	6.9	8.5	8.5	10.3	11.3	13.0	16.8	18.5	14.9	16.9	18.0	15.4	15.7	11.6	11.1	7.0	4.0	-5.1	-15.6	-24.9	-38.4	-56.2
Leq,d	26.3	-26.5	-20.4	-16.5	-3.5	1.5	-4.5	3.5	5.5	4.4	6.4	6.4	8.4	9.4	10.3	16.1	18.0	14.5	16.5	17.9	15.9	17.1	13.2	12.8	8.6	5.2	-4.5	-16.1	-27.0	-42.5	-62.6
Leq,d	18.8	-31.1	-25.1	-21.1	-8.1	-3.1	-9.1	-1.1	0.8	-0.3	1.7	1.7	3.7	4.6	5.6	9.5	11.2	7.1	8.9	9.9	7.4	7.6	3.3	2.4	-2.6	-7.3	-19.3	-34.5	-50.8	-73.7	
Leq,d	17.3	-30.3	-24.4	-20.5	-7.7	-2.9	-9.1	-1.4	0.4	-0.9	0.7	0.6	2.5	3.4	4.3	8.1	9.9	5.6	7.3	8.2	5.5	5.4	0.8	-0.6	-6.4	-12.1	-25.5	-42.8	-61.8	-88.5	
Leq,d	19.7	-28.2	-22.3	-18.5	-5.7	-0.9	-7.1	0.7	2.5	1.3	2.9	2.8	4.7	5.7	6.6	10.4	12.2	7.9	9.7	10.6	8.0	8.2	3.9	2.9	-2.0	-6.5	-18.2	-32.8	-48.0	-69.6	-97.5
Leq,d	22.6	-30.9	-24.8	-20.8	-7.8	-2.8	-8.7	-0.7	1.3	0.4	2.5	2.6	4.8	6.0	7.3	11.7	14.2	11.2	13.9	14.9	12.4	12.6	8.4	7.5	2.5	-2.1	-13.9	-28.9	-44.8	-67.4	-96.5
Leq,d	17.4	-32.1	-26.1	-22.1	-9.1	-4.2	-10.2	-2.2	-0.2	-1.3	0.6	0.6	2.6	3.5	4.4	8.3	10.0	5.8	7.5	8.4	5.8	5.8	1.2	-0.1	-5.7	-11.2	-24.3	-41.1	-59.4	-85.2	
Leq,d	20.0	-29.7	-23.7	-19.7	-6.7	-1.8	-7.8	0.2	2.1	1.1	3.0	3.0	5.0	5.9	6.8	10.7	12.4	8.2	10.0	10.9	8.4	8.5	4.3	3.4	-1.5	-5.8	-17.2	-31.3	-45.9	-66.7	-93.4
Leq,d	27.8	-20.2	-14.2	-15.0	-2.0	3.0	-3.0	5.0	7.0	5.9	7.9	7.9	9.9	10.9	11.9	17.5	19.5	15.9	18.2	19.8	17.5	18.0	14.1	13.9	10.1	7.3	-1.7	-12.3	-21.7	-35.3	-53.1

170 Units Date Palm Dr Cathedral City Noise
Contribution spectra - 001 - Date Palm Apartments: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Leq,d	26.2	-25.8	-19.8	-15.8	-2.8	2.2	-3.8	4.3	6.2	5.2	7.2	7.3	9.3	10.4	11.4	15.5	17.5	13.6	15.7	17.2	15.4	16.6	14.0	15.1	11.4	8.9	0.1	-10.5	-20.2	-34.5	-53.4
Leq,d	21.9	-28.5	-22.5	-18.5	-5.5	-0.6	-6.6	1.4	3.4	2.3	4.3	4.3	6.3	7.2	8.2	12.1	13.9	9.8	12.2	13.3	10.8	11.2	7.1	6.6	2.2	-1.3	-11.6	-24.2	-36.8	-55.0	-78.6
Leq,d	26.6	-26.3	-20.2	-16.2	-3.2	1.7	-4.2	3.8	5.8	4.8	6.8	6.9	9.0	10.1	11.2	15.3	17.4	13.7	16.1	17.9	16.7	18.2	14.6	14.4	10.7	7.9	-1.1	-12.0	-22.2	-37.1	-56.7
Leq,d	20.8	-30.3	-24.2	-20.2	-7.3	-2.3	-8.3	-0.3	1.6	0.6	2.6	2.6	4.5	5.5	6.4	10.3	12.1	7.9	11.9	13.1	10.6	10.7	6.4	5.3	0.2	-4.5	-16.3	-31.0	-46.2	-67.6	-95.2
Leq,d	27.1	-25.4	-19.3	-15.3	-2.3	2.6	-3.4	4.7	6.7	5.6	7.7	7.8	9.8	10.8	12.0	16.0	18.1	14.2	16.5	18.1	16.4	18.0	15.6	15.6	12.0	9.6	1.0	-9.4	-18.7	-32.6	-50.8
Leq,d	25.4	-28.3	-22.2	-18.2	-5.2	-0.2	-6.2	1.9	3.9	2.9	5.0	5.2	7.3	8.5	9.8	14.1	16.5	13.3	16.6	18.0	15.5	16.0	12.0	11.5	7.3	3.9	-6.2	-18.7	-31.0	-48.8	-71.9
Leq,d	32.6	-23.2	-17.2	-13.1	-0.1	4.9	-1.0	7.2	9.3	8.4	10.6	11.0	13.4	15.0	17.8	22.1	24.9	21.2	23.2	24.4	22.1	22.7	19.1	19.2	15.8	13.7	5.6	-3.7	-11.7	-23.5	-39.2
Leq,d	22.0	-26.6	-20.7	-16.9	-4.2	0.5	-5.7	1.9	3.7	2.4	4.0	3.9	5.8	6.7	7.5	11.3	13.0	10.0	11.7	14.6	12.0	12.1	7.8	6.9	2.1	-2.3	-13.5	-27.5	-41.7	-61.8	-87.6
Leq,d	28.3	-22.4	-16.3	-12.3	0.6	5.6	-0.4	7.7	9.6	8.6	10.5	10.5	12.5	13.4	14.4	18.7	20.5	16.4	18.2	19.2	16.9	17.4	13.7	13.8	10.4	8.3	0.4	-8.7	-16.4	-27.8	-43.0
Leq,d	21.4	-28.8	-22.8	-18.8	-5.8	-0.9	-6.9	1.2	3.1	2.0	4.0	4.1	6.0	7.0	7.9	11.8	13.6	9.5	11.4	12.5	10.0	10.4	6.4	5.9	1.6	-2.0	-12.4	-25.3	-38.3	-56.9	-81.1
Leq,d	22.5	-25.4	-19.6	-15.8	-3.0	1.7	-4.6	3.1	4.8	3.6	5.2	5.1	7.0	7.9	8.7	12.5	14.2	11.1	13.2	14.1	11.4	11.5	7.2	6.2	1.4	-2.7	-13.5	-26.4	-38.9	-56.7	-79.6
Leq,d	35.9	-19.4	-13.4	-9.3	3.8	8.8	2.9	11.4	13.5	12.7	14.8	15.4	18.1	20.2	21.6	25.5	28.1	24.0	26.0	27.1	25.0	25.8	22.4	22.9	20.1	18.8	11.9	4.2	-1.5	-10.6	-22.9
Leq,d	16.9	-30.7	-24.8	-21.1	-8.4	-3.6	-9.8	-2.1	-0.3	-1.5	0.2	0.2	2.0	3.0	3.9	7.7	9.4	5.2	6.9	7.8	5.1	5.0	0.4	-1.1	-7.0	-12.8	-26.6	-44.2	-63.9	-91.2	
Leq,d	21.0	-28.0	-22.1	-18.2	-5.3	-0.5	-6.6	1.1	2.9	1.6	2.9	2.9	4.7	5.7	6.5	10.3	12.2	9.8	11.6	12.7	10.4	10.9	7.3	6.2	1.0	-3.9	-16.2	-31.7	-48.2	-71.2	
Leq,d	21.4	-28.3	-22.4	-18.5	-5.6	-0.8	-7.0	0.7	2.5	1.2	2.7	2.6	4.5	5.5	6.3	10.2	12.0	10.5	12.8	13.8	11.2	11.4	7.0	5.9	0.7	-4.3	-16.6	-32.0	-48.3	-70.9	-99.8
Leq,d	25.3	-23.7	-17.9	-14.1	-1.3	3.4	-2.8	5.0	6.7	5.5	7.2	7.1	9.0	9.9	10.8	14.6	16.3	12.9	14.7	17.9	15.3	15.6	11.5	10.9	6.5	2.9	-7.2	-19.0	-29.9	-45.1	-64.7
Leq,d	23.8	-27.4	-21.4	-17.4	-4.4	0.5	-5.5	2.5	4.5	3.4	5.4	5.4	7.4	8.4	9.3	13.3	15.1	11.0	12.8	16.0	13.5	14.6	10.4	9.7	5.2	1.6	-8.4	-20.3	-31.8	-48.2	-69.7
Leq,d	18.6	-31.3	-25.2	-21.3	-8.3	-3.3	-9.3	-1.3	0.6	-0.4	1.5	1.5	3.5	4.4	5.4	9.3	11.0	6.9	8.7	9.7	7.2	7.4	3.0	2.1	-3.0	-7.8	-20.0	-35.4	-52.0	-75.4	
Leq,d	17.4	-31.7	-25.7	-21.7	-8.7	-3.8	-9.8	-1.8	0.1	-1.1	0.9	0.8	2.7	3.5	4.4	8.1	9.7	5.3	8.1	8.8	5.8	5.5	0.5	-1.3	-7.3	-13.1	-26.5	-43.2	-61.3	-86.5	
Leq,d	17.4	-32.9	-26.8	-22.9	-9.9	-4.9	-10.9	-2.9	-1.0	-2.1	-0.1	-0.1	1.8	2.7	3.7	7.6	9.3	5.1	8.4	9.3	6.6	6.6	1.9	0.4	-5.6	-11.6	-25.6	-43.5	-63.4	-91.0	
Leq,d	17.8	-33.8	-27.8	-23.8	-10.8	-5.8	-11.8	-3.8	-1.8	-2.8	-0.8	-0.7	1.3	2.3	3.4	7.5	9.5	5.6	7.8	9.5	7.9	8.7	3.9	2.3	-3.4	-9.9	-24.7	-43.8	-65.4	-95.4	
Leq,d	25.9	-26.8	-20.7	-16.7	-3.7	1.3	-4.7	3.3	5.3	4.3	6.3	6.4	8.5	9.5	10.7	14.7	16.8	13.0	15.3	17.1	15.6	17.6	14.0	13.8	9.9	7.0	-2.2	-13.5	-24.1	-39.6	-60.0
Leq,d	21.0	-29.1	-23.1	-19.1	-6.1	-1.1	-7.1	0.9	2.8	1.8	3.7	3.8	5.7	6.7	7.6	11.6	13.3	9.2	11.1	12.2	9.7	10.1	6.1	5.5	1.1	-2.6	-13.2	-26.4	-39.7	-58.8	-83.6
Leq,d	21.2	-28.2	-22.2	-18.2	-5.2	-0.3	-6.3	1.5	3.4	2.3	3.3	3.3	5.2	6.6	7.5	11.3	13.7	9.4	11.7	12.9	10.1	9.9	5.2	3.8	-1.8	-7.3	-20.0	-36.0	-53.0	-76.8	
Leq,d	19.2	-28.6	-22.7	-18.9	-6.1	-1.3	-7.5	0.2	2.0	0.7	2.3	2.2	4.0	5.0	5.8	9.6	11.2	6.9	8.5	9.3	6.5	9.9	5.7	4.8	0.1	-3.9	-15.9	-31.6	-48.4	-72.0	
Leq,d	16.6	-31.7	-25.9	-22.1	-9.3	-4.6	-10.8	-3.2	-1.5	-2.7	-1.1	-1.2	0.7	1.6	2.5	6.3	8.1	3.8	5.5	9.0	6.7	7.0	2.0	0.0	-6.7	-13.9	-29.6	-50.0	-73.2		
Leq,d	20.1	-31.6	-25.5	-21.5	-8.5	-3.6	-9.6	-1.5	0.4	-0.7	1.3	1.4	3.3	4.3	5.3	9.3	11.1	8.5	11.2	12.3	9.8	10.2	6.1	5.4	0.8	-3.5	-15.6	-31.6	-48.8	-72.9	
Leq,d	16.6	-32.1	-26.0	-22.1	-9.1	-4.1	-10.2	-2.2	-0.3	-1.4	0.5	0.5	2.3	3.2	4.0	7.8	9.4	5.0	6.5	7.3	4.4	4.1	-0.8	-2.4	-8.0	-14.0	-27.6	-44.8	-63.4	-89.4	
Leq,d	18.4	-32.0	-25.9	-21.9	-9.0	-4.0	-10.0	-2.0	0.0	-1.1	0.9	0.9	2.8	3.8	4.8	8.7	10.5	6.3	8.1	10.4	7.8	7.8	3.3	2.1	-3.2	-8.3	-20.8	-36.6	-53.6	-77.3	
Leq,d	16.6	-32.4	-26.4	-22.4	-9.4	-4.5	-10.5	-2.5	-0.6	-1.8	0.1	0.1	1.9	2.8	3.6	7.4	8.9	4.5	7.4	8.1	5.0	4.6	-0.5	-2.4	-8.8	-15.1	-29.1	-46.8	-66.2	-93.0	
Leq,d	16.8	-33.4	-27.4	-23.4	-10.4	-5.5	-11.5	-3.4	-1.5	-2.6	-0.6	-0.7	1.3	2.2	3.1	7.0	8.7	4.5	7.8	8.7	6.0	5.9	1.1	-0.6	-6.8	-13.3	-27.8	-46.5	-67.5	-96.6	
Leq,d	19.1	-31.4	-25.3	-21.4	-8.4	-3.4	-9.4	-1.4	0.5	-0.6	1.4	1.4	3.3	4.3	5.2	9.1	10.8	6.6	10.2	11.1	8.4	8.4	3.8	2.4	-3.2	-8.5	-21.2	-37.2	-54.2	-78.1	
Leq,d	18.0	-32.6	-26.6	-22.6	-9.6	-4.7	-10.7	-2.6	-0.7	-1.8	0.2	0.2	2.1	3.0	4.0	7.9	9.6	5.4	8.7	10.5	7.7	7.7	3.0	1.5	-4.4	-10.4	-24.2	-41.9	-61.3	-88.2	
Leq,d	18.9	-33.6	-27.6	-23.6	-10.5	-5.6	-11.5	-3.5	-1.5	-2.5	-0.5	-0.4	1.7	2.8	4.0	8.2	10.4	6.8	9.5	11.8	9.1	9.0	4.3	2.7	-3.4	-9.7	-24.0	-42.7	-63.8	-93.1	
Leq,d	17.1	-33.1	-27.1	-23.1	-10.1	-5.2	-11.2	-3.2	-1.3	-2.3	-0.4	-0.4	1.5	2.5	3.4	7.3	9.0	4.8	8.1	9.0	6.3	6.2	1.5	-0.1	-6.2	-12.5	-26.7	-45.0	-65.4	-93.8	
Leq,d	17.1	-31.1	-25.1	-21.1	-8.1	-3.2	-9.2	-1.6	0.3	-0.9	0.2	0.2	2.0	3.3	4.1	7.9	10.1	5.7	7.2	8.0	5.1	4.8	-0.2	-2.1	-5.8	-12.8	-28.2	-48.3	-70.9		

170 Units Date Palm Dr Cathedral City Noise
Contribution spectra - 001 - Date Palm Apartments: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Leq,d	20.1	-27.9	-21.9	-18.0	-5.0	-0.2	-6.2	1.5	3.3	2.1	3.2	3.1	4.9	6.0	6.8	10.5	12.4	8.0	10.4	11.5	8.6	8.4	3.6	2.1	-3.5	-8.7	-21.2	-36.7	-53.1	-76.0	
Receiver R3 Fl G Lr,lim dB(A) Leq,d 41.8 dB(A)																															
Leq,d	-0.7					-8.6			-3.8			-13.2			-10.2			-10.9			-11.6			-21.7			-48.8				
Leq,d	3.3					-5.9			-0.6			-8.8			-6.9			-4.8			-5.4			-12.0			-39.6				
Leq,d	4.1					-5.7			-0.4			-11.0			-6.9			-3.1			-3.1			-9.4			-36.0				
Leq,d	4.7					-6.8			-1.5			-12.1			-10.3			-1.4			-0.3			-5.9			-30.2			-95.9	
Leq,d	-0.3					-8.1			-3.4			-14.4			-12.8			-8.9			-10.3			-20.2			-45.1				
Leq,d	-1.2					-9.3			-4.7			-15.7			-10.6			-10.0			-11.4			-20.9			-48.1				
Leq,d	2.5					-8.2			-2.2			-12.7			-8.9			-5.3			-3.6			-10.5			-31.6			-86.9	
Leq,d	-0.4					-8.1			-2.7			-12.9			-11.0			-13.0			-13.9			-23.5			-52.9				
Leq,d	-0.6					-8.5			-3.9			-14.7			-10.6			-10.0			-10.1			-20.3			-48.1				
Leq,d	-0.5					-8.3			-3.5			-12.7			-10.6			-11.1			-11.0			-21.8			-49.4				
Leq,d	1.1					-6.7			-1.5			-12.2			-10.5			-8.3			-11.0			-21.7			-46.6				
Leq,d	-0.6					-10.4			-5.3			-11.6			-8.3			-8.1			-10.6			-18.9			-38.3			-83.1	
Leq,d	19.6					1.6			12.4			3.9			9.8			13.5			14.2			10.1			-0.9			-27.9	
Leq,d	26.6					11.0			22.1			11.0			16.5			19.1			19.7			16.3			7.4			-13.1	
Leq,d	20.9					4.3			16.6			4.2			10.1			13.6			14.2			10.3			-0.1			-25.3	
Leq,d	14.6					-2.2			8.6			-3.9			4.0			8.5			9.1			4.2			-10.1			-46.4	
Leq,d	13.2					0.1			7.2			-2.6			0.2			7.4			7.4			3.2			-12.5			-52.4	
Leq,d	0.4					-8.1			-3.3			-14.1			-12.6			-12.4			-5.5			-13.4			-42.6				
Leq,d	18.0					5.1			14.0			0.0			6.1			10.9			11.3			6.1			-9.1			-48.1	
Leq,d	16.9					3.2			11.2			-0.3			5.9			11.0			11.2			5.2			-12.4			-57.5	
Leq,d	13.4					1.3			8.1			-2.1			3.2			7.1			7.1			0.7			-17.8			-66.0	
Leq,d	14.5					0.5			6.8			-4.3			4.1			8.9			9.4			4.5			-9.5			-47.4	
Leq,d	18.5	-33.3	-27.2	-23.2	-10.3	-5.3	-11.3	-3.3	-1.4	-2.5	-0.5	-0.5	1.4	2.4	3.3	7.2	10.9	6.6	9.5	11.2	8.4	8.3	3.4	1.7	-4.6	-11.1	-25.7	-44.4	-65.2	-93.8	
Leq,d	19.7	-28.1	-22.2	-18.4	-5.5	-0.7	-6.9	0.8	2.6	1.4	2.9	2.8	4.7	5.6	6.5	10.4	12.2	7.9	9.7	10.7	8.1	8.3	4.0	3.1	0.2	-4.3	-16.0	-30.7	-46.2	-68.1	-96.5
Leq,d	21.4	-31.1	-25.0	-21.0	-8.1	-3.1	-9.1	-1.1	0.8	-0.2	1.7	1.7	3.7	4.6	5.6	9.5	13.3	9.1	12.1	14.2	11.6	11.9	7.8	6.7	1.2	-3.8	-16.6	-32.8	-50.1	-74.0	
Leq,d	15.6	-34.3	-28.3	-24.3	-11.3	-6.4	-12.4	-4.4	-2.5	-3.6	-1.6	-1.6	0.3	1.2	2.1	6.0	7.7	3.5	5.1	7.4	5.5	5.2	0.2	-1.9	-8.7	-15.9	-31.6	-51.9	-75.0		
Leq,d	14.6	-34.1	-28.1	-24.1	-11.2	-6.2	-12.3	-4.4	-2.6	-3.8	-1.9	-2.1	-0.4	0.3	0.9	4.5	5.8	1.1	2.3	6.9	4.8	5.1	-0.2	-2.5	-9.4	-16.5	-32.3	-52.7	-75.9		
Leq,d	16.2	-31.0	-25.1	-21.3	-8.5	-3.7	-9.9	-2.0	-0.2	-1.4	0.3	0.2	1.9	2.5	3.2	6.7	8.1	3.4	4.7	8.1	5.0	4.6	-0.5	1.4	-4.9	-11.3	-25.7	-44.1	-64.0	-90.5	
Leq,d	17.5	-32.1	-26.1	-22.1	-9.1	-4.2	-10.2	-2.2	-0.3	-1.3	0.6	0.6	2.6	3.5	4.5	8.3	10.1	5.9	7.6	8.6	6.0	6.1	1.6	0.3	-5.2	-10.5	-23.6	-40.1	-58.4	-84.0	
Leq,d	20.6	-29.0	-23.0	-19.0	-6.0	-1.1	-7.1	0.9	2.9	1.8	3.7	3.7	5.6	6.6	7.5	11.3	13.0	8.8	10.5	11.5	8.9	9.1	4.8	3.9	1.6	-2.5	-13.5	-27.0	-40.8	-60.4	-85.8
Leq,d	22.1	-26.6	-20.6	-16.7	-3.7	1.2	-4.9	2.8	4.6	3.3	4.4	4.3	6.1	7.2	8.0	11.8	13.7	10.9	12.6	13.6	11.0	11.1	8.0	7.1	3.3	-1.1	-12.4	-26.5	-40.9	-61.2	-87.3
Leq,d	17.0	-32.8	-26.7	-22.8	-9.8	-4.8	-10.8	-2.8	-0.9	-2.0	0.0	0.0	1.9	2.9	3.8	7.7	9.5	5.3	7.0	8.0	5.4	5.4	0.8	1.0	-4.8	-10.8	-24.5	-42.2	-61.7	-88.9	
Leq,d	19.9	-29.8	-23.8	-19.8	-6.8	-1.8	-7.9	0.2	2.1	1.0	3.0	3.0	4.9	5.8	6.8	10.6	12.4	8.2	9.9	10.9	8.4	8.6	4.3	3.4	-1.4	-5.8	-17.1	-31.3	-46.0	-66.8	-93.7
Leq,d	20.9	-30.4	-24.4	-20.4	-7.4	-2.4	-8.4	-0.4	1.5	0.4	2.4	2.4	4.4	5.3	6.3	10.2	13.9	9.7	11.5	12.5	10.0	10.2	5.9	4.9	-0.1	-4.0	-15.7	-30.7	-46.5	-68.6	-96.8

170 Units Date Palm Dr Cathedral City Noise
Contribution spectra - 001 - Date Palm Apartments: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Leq,d	15.9	-31.8	-25.8	-21.8	-8.9	-4.0	-10.1	-2.1	-0.3	-1.5	0.3	0.1	1.8	2.5	3.2	6.7	8.0	3.4	4.6	7.7	4.5	4.1	-1.1	-3.1	-9.4	-15.8	-29.7	-47.1	-65.7	-91.1	
Leq,d	18.1	-29.9	-23.9	-20.0	-7.0	-2.1	-8.2	-0.2	1.6	0.4	2.2	2.1	3.8	4.5	5.1	8.7	10.0	7.2	8.5	9.1	6.0	5.7	0.7	-0.9	-6.7	-12.0	-24.4	-39.4	-54.7	-76.0	
Leq,d	23.6	-24.7	-18.8	-14.9	-2.0	2.8	-3.3	4.4	6.1	4.8	6.0	5.8	7.4	8.3	9.0	14.4	16.1	12.3	13.9	14.7	12.3	12.3	7.9	6.9	2.0	-2.2	-13.1	-26.3	-39.3	-57.3	-80.1
Leq,d	19.8	-29.8	-23.8	-19.9	-6.9	-2.0	-8.1	-0.1	1.7	0.5	2.3	2.1	3.8	4.5	5.2	8.7	10.1	9.7	11.2	12.0	9.2	9.1	4.5	3.3	-2.0	-6.9	-19.1	-34.3	-50.2	-72.5	
Leq,d	24.8	-23.8	-17.9	-14.0	-1.1	3.7	-2.5	5.2	7.0	5.6	6.8	6.5	8.2	9.1	9.7	15.5	17.9	13.5	15.1	15.9	13.2	13.3	9.1	8.4	4.0	0.4	-9.7	-21.9	-33.7	-50.6	-72.3
Leq,d	18.6	-30.1	-24.1	-20.1	-7.2	-2.3	-8.3	-0.4	1.4	0.3	2.1	1.9	3.7	4.3	5.0	8.6	9.9	7.1	9.8	10.5	7.5	7.3	2.4	0.9	-4.9	-10.4	-23.2	-38.9	-55.0	-76.9	
Leq,d	23.6	-27.7	-21.7	-17.7	-4.8	0.2	-5.9	2.1	3.9	2.8	4.6	4.5	6.3	7.0	7.8	11.4	15.8	12.2	14.0	15.1	13.1	13.8	10.6	10.2	5.8	2.2	-8.1	-20.8	-33.3	-51.3	-74.8
Leq,d	13.6	-32.0	-26.0	-22.1	-9.3	-4.5	-10.8	-3.1	-1.5	-2.9	-1.4	-1.9	-0.5	-0.1	0.2	3.4	4.4	-0.6	0.4	0.6	5.1	5.0	0.4	-1.1	-6.9	-12.6	-26.1	-43.4	-62.5	-89.2	
Leq,d	13.0	-34.3	-28.3	-24.3	-11.3	-6.4	-12.5	-4.5	-2.7	-3.9	-2.0	-2.2	-0.5	0.2	0.9	4.5	5.9	1.2	2.5	2.9	-0.5	-1.2	-6.7	-9.2	-16.4	-23.9	-39.7	-60.1	-83.3		
Leq,d	11.7	-34.3	-28.3	-24.5	-11.7	-6.9	-13.2	-5.5	-3.9	-5.3	-3.8	-4.3	-2.9	-2.6	-2.3	0.9	1.9	-3.1	3.0	3.5	2.1	1.5	-4.0	-6.7	-14.2	-22.4	-39.4	-60.8	-85.8		
Leq,d	23.2	-25.1	-19.3	-15.4	-2.7	2.1	-4.1	3.6	5.3	4.0	5.5	5.3	7.0	7.7	8.4	12.0	15.8	12.2	13.8	14.6	12.3	12.4	8.0	7.1	2.4	-1.7	-12.5	-25.6	-38.4	-56.3	-79.0
Leq,d	10.9	-32.7	-26.9	-23.1	-10.4	-5.7	-12.0	-4.5	-2.9	-4.4	-3.0	-3.5	-2.0	-1.6	-1.3	2.0	3.1	-1.9	-1.0	-0.9	-4.4	-5.4	-2.7	-4.8	-11.5	-18.7	-34.4	-55.0	-78.7		
Leq,d	10.3	-34.2	-28.3	-24.4	-11.5	-6.8	-13.0	-5.3	-3.6	-5.1	-3.5	-4.0	-2.6	-2.2	-1.9	1.3	2.3	-2.7	-1.8	-1.7	-1.0	-2.0	-7.8	-10.8	-18.4	-25.4	-42.4	-59.2	-84.3		
Leq,d	20.9	-28.4	-22.3	-18.4	-5.4	-0.4	-6.5	1.5	3.5	2.4	4.3	4.3	6.2	7.1	7.9	11.8	13.4	9.1	10.8	11.7	9.0	9.1	4.7	3.9	-0.8	-4.8	-15.5	-28.7	-41.7	-60.3	-84.4
Leq,d	23.6	-28.8	-22.7	-18.7	-5.7	-0.8	-6.8	1.3	3.2	2.2	4.2	4.3	6.3	7.3	8.4	12.4	15.8	11.8	13.7	15.0	12.9	13.8	10.6	11.1	7.0	3.2	-7.0	-20.0	-33.1	-51.7	-75.8
Leq,d	27.3	-26.6	-20.5	-16.5	-3.5	1.5	-4.5	3.6	5.6	4.6	6.7	6.8	8.9	10.1	11.3	15.5	18.5	14.9	17.6	20.0	17.6	18.1	14.3	14.1	10.3	7.4	-1.5	-12.7	-23.3	-38.6	-58.7
Leq,d	10.2	-34.1	-28.1	-24.2	-11.4	-6.6	-12.8	-5.0	-3.4	-4.8	-3.3	-3.7	-2.3	-1.9	-1.6	1.7	2.7	-2.3	-1.3	-1.2	-4.8	-5.8	-11.5	-14.1	-21.3	-28.7	-44.4	-64.5	-85.6		
Leq,d	16.0	-30.7	-24.8	-21.0	-8.3	-3.5	-9.7	-1.9	-0.1	-1.4	0.4	0.2	1.9	2.6	3.2	6.7	8.1	3.4	6.6	7.2	4.2	3.8	-1.2	-3.1	-9.3	-15.6	-27.5	-45.4	-64.7	-90.8	
Leq,d	18.1	-31.6	-25.6	-21.6	-8.6	-3.7	-9.7	-1.7	0.3	-0.8	1.2	1.2	3.1	4.0	5.0	8.9	10.6	6.4	8.2	9.2	6.6	6.7	2.2	1.1	-4.2	-9.3	-21.2	-37.5	-55.1	-79.6	
Leq,d	27.6	-21.7	-15.6	-11.7	1.3	6.3	0.2	8.4	10.3	9.2	11.0	10.9	12.8	13.7	14.5	18.3	20.0	15.7	17.4	18.3	15.7	15.9	12.0	11.8	8.1	5.8	-2.2	-11.4	-19.0	-30.2	-45.0
Leq,d	27.8	-23.8	-17.8	-13.8	-0.8	4.1	-1.9	6.2	8.1	7.1	9.0	9.1	11.0	13.3	14.3	18.2	20.0	15.9	17.8	18.9	16.5	17.1	13.4	14.4	10.7	8.2	-0.4	-10.3	-18.8	-31.4	-47.9
Leq,d	24.0	-26.4	-20.4	-16.4	-3.4	1.6	-4.4	3.6	5.5	4.5	6.5	6.5	8.4	9.4	10.4	14.3	16.1	12.0	13.9	15.0	12.7	13.2	9.5	9.3	5.5	2.7	-6.4	-17.5	-27.9	-43.0	-62.9
Leq,d	22.0	-28.6	-22.8	-19.0	-6.3	-1.5	-7.7	0.2	1.9	0.7	2.4	2.3	4.0	4.6	5.3	8.8	14.2	11.2	13.7	14.6	11.9	12.0	7.6	6.6	1.6	-3.1	-14.9	-29.7	-45.3	-67.3	-95.6
Leq,d	21.4	-25.4	-19.6	-15.8	-3.0	1.7	-4.5	3.3	5.0	3.7	5.4	5.2	6.9	7.7	8.3	11.9	13.4	10.2	11.6	12.3	9.4	9.3	4.7	3.6	-1.4	-5.5	-16.1	-28.6	-40.4	-57.2	-78.9
Leq,d	27.6	-23.2	-17.2	-13.2	-0.2	4.8	-1.2	6.8	8.7	7.7	9.7	9.7	11.7	12.6	13.6	18.0	19.8	15.8	17.7	18.7	16.4	17.0	13.3	13.4	10.0	8.0	0.0	-9.4	-17.3	-29.2	-45.1
Leq,d	15.9	-34.4	-28.4	-24.4	-11.4	-6.5	-12.5	-4.5	-2.6	-3.7	-1.7	-1.8	0.1	1.0	1.9	5.8	7.4	5.4	7.0	7.9	5.0	4.7	-0.4	-2.6	-9.4	-16.7	-32.6	-53.3	-77.1		
Leq,d	25.6	-25.6	-19.6	-15.6	-2.6	2.4	-3.6	4.4	6.4	5.3	7.3	7.4	9.3	10.3	11.3	15.3	17.2	13.7	15.7	16.9	14.7	15.4	11.8	12.0	8.6	6.6	-1.5	-10.8	-19.6	-33.7	-52.2
Leq,d	28.3	-17.6	-16.4	-12.4	0.6	5.6	-0.4	7.7	9.6	8.6	10.5	10.5	12.5	13.5	14.4	18.4	20.5	16.4	18.3	19.4	17.1	17.7	14.1	14.3	11.1	9.2	1.4	-7.6	-15.0	-26.3	-41.3
Leq,d	29.6	-20.4	-14.3	-10.4	2.6	7.6	1.6	9.8	11.7	10.6	12.4	12.4	14.3	15.2	16.2	20.0	21.8	17.6	19.4	20.4	17.9	18.4	14.7	14.7	11.4	9.4	1.8	-6.8	-13.6	-23.8	-37.5
Leq,d	29.7	-21.5	-15.5	-11.5	1.5	6.5	0.5	8.7	10.6	9.6	11.4	11.5	13.5	14.5	15.5	19.5	21.6	17.5	19.5	20.8	18.6	19.4	16.0	16.5	13.7	12.3	5.3	-2.7	-8.8	-18.1	-30.5
Leq,d	32.4	-18.7	-12.7	-8.7	4.3	9.3	3.3	11.6	13.6	12.5	14.2	14.3	16.2	17.2	18.2	22.2	24.2	20.1	22.1	23.3	21.3	22.1	18.8	19.3	16.6	15.4	8.8	1.3	-4.0	-12.5	-24.0
Leq,d	29.1	-22.3	-16.2	-12.2	0.8	5.7	-0.3	7.8	9.8	8.7	10.7	10.7	12.7	13.7	14.7	19.2	21.1	17.1	19.0	20.2	18.0	18.7	15.3	15.6	12.5	10.8	3.3	-5.2	-12.1	-22.6	-36.6
Leq,d	27.8	-22.8	-16.8	-12.8	0.1	5.1	-1.0	7.1	9.0	7.8	9.7	9.7	11.5	12.4	13.2	18.4	20.6	16.4	18.0	18.9	16.4	16.7	12.6	12.2	8.2	7.5	-1.4	-11.8	-20.8	-33.6	-50.2
Leq,d	27.8	-24.6	-18.5	-14.6	-1.6	3.4	-2.6	5.4	7.4	6.3	8.3	8.3	10.3	12.6	13.6	17.5	20.3	16.4	18.2	19.3	17.0	17.5	13.6	13.5	9.7	7.1	-1.5	-11.6	-20.5	-33.6	-50.7
Leq,d	23.3	-26.8	-20.8	-16.8	-3.8	1.1	-4.9	3.1	5.1	4.0	6.0	6.0	7.9	8.9	9.8	13.7	15.5	11.4	13.2	14.5	12.0	12.4	8.4	8.0	3.8	0.7	-8.9	-20.6	-31.7	-47.8	-68.8
Leq,d	28.5	-23.1	-17.1	-13.1	-0.1	4.9	-1.1	6.9	8.9	7.8	9.8	9.8	11.8	12.7	13.7	17.6	20.8	16.7	18.6	19.8	17.5	18.2	14.6	14.8	11.5	9.5	1.4	-8.4	-16.9	-29.1	-45.1

170 Units Date Palm Dr Cathedral City Noise
Contribution spectra - 001 - Date Palm Apartments: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Leq,d	24.8	-26.0	-20.0	-16.0	-3.0	1.9	-4.1	4.0	5.9	4.8	6.8	6.9	8.8	9.8	10.8	14.7	16.6	13.2	15.1	16.2	13.9	14.4	10.6	10.4	6.6	3.8	-5.2	-15.9	-25.9	-40.5	-59.6
Leq,d	27.2	-24.0	-18.0	-14.0	-1.0	3.9	-2.1	6.0	7.9	6.9	8.9	8.9	10.9	11.8	13.5	17.3	19.6	15.5	17.3	18.4	16.1	16.6	12.9	13.0	9.5	7.3	-0.9	-10.5	-18.9	-31.3	-47.8
Receiver R3 Fl G Lr,lim dB(A) Leq,d 42.5 dB(A)																															
Leq,d	11.9					-0.5			5.5			-6.6			-0.4			3.5			7.8			1.9			-18.3			-69.2	
Leq,d	5.6					-3.7			2.0			-9.1			-3.9			-4.5			-2.8			-6.4			-30.6			-91.8	
Leq,d	4.3					-4.4			1.0			-10.3			-5.7			-6.2			-4.6			-9.1			-34.0			-92.1	
Leq,d	4.1					-4.2			1.4			-10.2			-8.4			-5.8			-6.8			-9.8			-35.1			-86.9	
Leq,d	5.1					-3.6			2.1			-9.0			-5.9			-3.4			-5.1			-14.7			-38.6			-91.6	
Leq,d	12.6					-1.4			4.3			-7.9			0.3			6.1			8.9			2.6			-17.7			-69.6	
Leq,d	2.1					-7.3			-1.8			-14.4			-12.7			-7.7			-3.9			-10.5			-30.7			-67.6	
Leq,d	17.2					0.3			9.4			-0.7			7.1			11.7			12.3			7.1			-8.0			-46.5	
Leq,d	18.0					2.7			10.9			-0.6			7.0			12.2			13.1			7.4			-9.1			-49.4	
Leq,d	18.0					2.2			10.6			-0.4			6.9			12.6			13.1			7.4			-9.2			-50.7	
Leq,d	21.4					3.8			14.5			5.0			11.3			15.5			16.1			11.5			-1.6			-34.5	
Leq,d	-1.4					-9.4			-3.8			-14.5			-12.6			-12.2			-13.8			-23.9			-49.0				
Leq,d	4.5					-4.4			2.6			-11.5			-8.5			-6.6			-8.0			-15.0			-32.1			-73.0	
Leq,d	-4.0					-11.5			-6.6			-18.3			-16.8			-13.7			-14.9			-23.0			-42.5			-89.0	
Leq,d	-1.8					-10.0			-4.3			-14.8			-13.1			-12.1			-14.1			-23.6			-46.5				
Leq,d	-7.7					-14.6			-9.9			-20.7			-19.3			-21.4			-23.3			-31.5			-55.0				
Leq,d	20.6					5.3			14.1			3.0			10.6			14.5			15.1			10.7			-1.3			-29.8	
Leq,d	5.3					-3.7			2.1			-7.7			-5.8			-3.5			-4.8			-10.6			-36.6			-93.8	
Leq,d	8.1					-2.1			4.3			-8.8			-5.6			-1.2			2.2			-6.0			-28.2			-77.5	
Leq,d	9.9					-0.4			6.2			-6.5			-2.4			1.5			3.3			-4.5			-26.3			-77.5	
Leq,d	10.4					-0.2			6.6			-4.8			-1.6			2.4			3.5			-3.6			-24.8			-76.1	
Leq,d	16.2					1.4			7.7			-5.2			5.7			10.8			11.3			7.0			-7.5			-44.3	
Leq,d	16.3	-31.8	-25.8	-21.8	-8.9	-3.9	-10.0	-2.0	-0.1	-1.3	0.6	0.5	2.3	3.1	3.9	7.6	9.1	4.6	6.0	6.6	3.5	3.2	-1.8	-3.6	-9.5	-15.3	-28.7	-45.5	-63.7	-89.0	
Leq,d	19.8	-30.9	-24.8	-20.8	-7.8	-2.9	-8.9	-0.9	1.1	0.0	2.0	2.0	3.9	4.9	5.9	9.8	11.5	7.4	10.2	11.3	8.7	9.0	6.8	5.8	0.8	-3.8	-15.8	-30.8	-46.6	-69.0	-98.0
Leq,d	18.8	-27.8	-22.0	-18.2	-5.3	-0.6	-6.7	1.1	2.9	1.6	3.3	3.2	4.9	5.7	6.4	10.0	11.4	6.9	8.3	8.8	5.8	5.6	0.8	2.1	-3.3	-8.3	-20.3	-34.9	-49.4	-69.5	-95.2
Leq,d	16.4	-32.1	-26.1	-22.1	-9.2	-4.2	-10.3	-2.3	-0.4	-1.5	0.4	0.4	2.2	3.0	3.9	7.6	9.1	4.7	6.2	6.9	3.9	3.6	-1.3	-3.0	-9.0	-15.0	-28.5	-45.7	-64.5	-90.6	
Leq,d	24.1	-29.4	-23.3	-19.3	-6.3	-1.3	-7.3	0.7	2.7	1.7	3.7	3.8	5.9	6.9	8.1	12.2	14.2	10.5	14.8	16.5	14.8	15.7	11.6	10.8	6.2	2.1	-8.8	-22.4	-36.1	-55.7	-81.1
Leq,d	21.5	-25.1	-19.2	-15.4	-2.5	2.2	-4.0	3.8	5.5	4.2	5.6	5.5	7.2	8.1	8.8	12.5	14.1	9.6	11.1	11.8	8.9	8.9	4.4	3.5	-0.6	-4.5	-15.2	-27.8	-40.0	-57.3	-79.6
Leq,d	16.8	-29.0	-23.2	-19.5	-6.8	-2.1	-8.3	-0.6	1.1	-0.2	1.4	1.2	3.0	3.8	4.5	8.1	9.6	5.0	6.4	7.0	3.9	3.5	-1.5	-3.1	-9.0	-14.5	-27.5	-43.7	-61.1	-85.3	
Leq,d	23.1	-30.8	-24.8	-20.8	-7.8	-2.8	-8.7	-0.6	1.4	0.4	2.5	2.6	4.8	6.0	7.3	11.7	14.2	11.2	14.8	15.8	13.2	13.4	9.0	8.0	2.9	-1.8	-13.8	-28.8	-44.7	-67.2	-96.3
Leq,d	26.1	-25.7	-19.7	-15.7	-2.7	2.3	-3.7	4.1	6.0	5.0	6.0	6.0	7.9	9.4	10.3	14.2	16.7	12.6	15.7	19.0	17.1	17.4	13.3	12.8	8.3	4.5	-6.0	-19.0	-31.9	-50.6	-74.7
Leq,d	16.4	-31.6	-25.6	-21.6	-8.6	-3.7	-9.8	-1.8	0.1	-1.1	0.8	0.7	2.5	3.3	4.1	7.7	9.2	4.7	6.1	6.7	3.6	3.2	-1.7	-3.4	-9.3	-15.0	-28.2	-44.7	-62.5	-87.3	
Leq,d	19.1	-30.9	-24.8	-20.8	-7.8	-2.9	-8.9	-0.9	1.1	0.0	2.0	2.0	3.9	4.9	5.8	9.7	11.5	7.4	9.2	10.2	7.7	8.0	3.7	2.8	-2.1	-6.7	-18.5	-33.4	-46.7	-69.1	-98.1

170 Units Date Palm Dr Cathedral City Noise
Contribution spectra - 001 - Date Palm Apartments: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Leq,d	20.1	-26.8	-20.9	-17.1	-4.3	0.4	-5.8	1.9	3.6	2.3	3.8	3.6	5.3	6.1	6.7	10.3	11.8	7.2	10.2	10.9	8.0	10.1	5.4	3.9	-1.7	-7.1	-19.5	-34.3	-48.7	-68.4	-93.6
Leq,d	24.5	-23.3	-17.3	-13.4	-0.4	4.5	-1.6	6.3	8.1	6.9	8.0	7.9	9.7	10.8	11.5	15.2	17.1	12.7	14.4	15.1	12.3	12.3	7.9	7.2	2.7	-0.7	-10.4	-22.0	-32.9	-48.6	-68.9
Leq,d	30.1	-20.7	-14.7	-10.7	2.3	7.2	1.2	9.5	11.4	10.3	12.2	12.2	14.2	15.1	16.1	20.1	22.0	17.9	19.9	21.0	18.8	19.8	16.3	16.5	13.5	11.8	4.5	-3.8	-10.3	-20.3	-33.8
Leq,d	30.0	-16.1	-14.8	-10.9	2.1	7.1	1.1	9.3	11.2	10.2	12.0	12.1	14.0	15.0	16.0	19.9	21.9	17.8	19.8	20.9	18.7	19.6	16.1	16.5	13.4	11.8	4.4	-3.9	-10.4	-20.5	-34.0
Leq,d	27.5	-22.4	-16.4	-12.4	0.6	5.5	-0.5	7.6	9.5	8.4	10.3	10.3	12.2	13.1	14.0	17.8	19.6	15.3	17.2	18.1	16.5	16.9	12.8	12.5	8.6	6.0	-2.4	-11.9	-19.9	-31.6	-47.1
Leq,d	22.5	-24.9	-19.1	-15.3	-2.5	2.3	-3.9	3.9	5.6	4.4	6.0	5.8	7.5	8.3	8.9	12.5	14.0	11.0	12.7	13.8	11.6	11.7	7.2	6.1	1.1	-3.2	-14.0	-26.6	-38.1	-54.0	-74.6
Leq,d	34.1	-19.4	-13.3	-9.3	3.7	8.7	2.7	11.0	13.0	12.0	13.8	13.9	15.9	17.0	18.2	22.3	24.5	20.7	23.1	24.9	23.6	25.9	22.6	23.1	20.4	19.1	12.3	4.6	-1.1	-10.0	-22.1
Leq,d	34.1	-19.4	-13.4	-9.4	3.6	8.6	2.6	10.9	12.9	11.9	13.7	13.8	15.9	17.0	18.1	22.2	24.4	20.8	23.3	25.0	23.8	25.9	22.6	23.1	20.3	19.0	12.1	4.4	-1.3	-10.2	-22.4
Leq,d	30.0	-24.8	-18.7	-14.7	-1.7	3.4	-2.6	5.6	7.6	6.7	8.9	9.3	11.6	13.1	14.9	19.5	22.5	18.4	20.4	21.6	19.3	19.9	16.2	16.3	12.8	10.5	2.1	-7.9	-16.9	-30.2	-47.7
Leq,d	17.1	-31.5	-25.5	-21.5	-8.5	-3.6	-9.6	-1.6	0.3	-0.8	1.1	1.0	2.9	3.7	4.6	8.3	9.9	5.5	7.0	7.7	4.8	4.6	-0.2	-1.8	-7.5	-13.1	-26.1	-42.4	-60.0	-84.6	
Leq,d	22.5	-28.8	-22.7	-18.7	-5.7	-0.8	-6.7	1.3	3.2	2.2	4.2	4.3	6.2	7.2	8.3	12.3	14.2	10.2	12.6	13.8	11.6	12.4	8.9	9.3	6.3	2.9	-7.4	-20.2	-33.1	-51.6	-75.6
Leq,d	27.2	-20.7	-14.8	-11.0	1.8	6.6	0.4	8.4	10.1	8.9	10.5	10.5	12.3	13.2	14.1	17.8	19.6	15.3	16.9	17.8	15.3	15.6	11.6	11.4	7.8	5.4	-2.9	-12.4	-20.4	-32.2	-47.8
Leq,d	19.1	-30.8	-24.7	-20.8	-7.8	-2.8	-8.8	-0.8	1.1	0.1	2.0	2.0	4.0	4.9	5.9	9.8	11.5	7.3	9.1	10.2	7.6	7.8	3.5	2.6	-2.4	-6.9	-18.9	-33.9	-49.9	-72.3	
Leq,d	25.7	-28.2	-22.1	-18.1	-5.1	-0.1	-6.0	2.1	4.1	3.1	5.2	5.4	7.5	8.8	10.2	14.6	17.2	14.3	16.8	17.9	15.5	16.0	12.0	11.7	7.5	4.1	-5.9	-18.3	-30.5	-48.1	-71.0
Leq,d	18.1	-28.4	-22.5	-18.7	-5.9	-1.2	-7.5	0.1	1.8	0.5	1.9	1.8	3.5	4.4	5.1	8.7	10.3	5.8	7.2	9.3	6.3	6.9	1.9	0.1	-5.8	-11.8	-25.1	-41.3	-58.3	-81.8	
Leq,d	24.8	-28.6	-22.6	-18.6	-5.6	-0.6	-6.5	1.5	3.5	2.5	4.6	4.7	6.8	8.0	9.2	13.5	15.8	12.3	15.3	17.4	15.0	15.4	11.5	11.2	6.8	7.2	-3.1	-15.8	-28.6	-47.0	-70.9
Leq,d	20.6	-25.5	-19.7	-15.9	-3.1	1.6	-4.6	3.1	4.9	3.6	5.0	4.8	6.5	7.3	7.9	11.4	12.9	8.3	9.6	11.7	8.7	8.5	3.8	2.5	-2.7	-7.1	-17.8	-30.5	-42.7	-60.1	-82.5
Leq,d	22.6	-26.9	-20.9	-17.0	-4.1	0.8	-5.2	2.5	4.4	3.2	4.3	4.2	6.1	7.2	8.1	11.8	13.8	10.1	14.0	14.9	12.2	12.3	7.9	6.9	1.8	-2.8	-14.5	-28.8	-43.5	-64.1	-90.7
Leq,d	20.0	-28.3	-22.2	-18.3	-5.3	-0.4	-6.4	1.6	3.4	2.3	4.2	4.1	5.9	6.7	7.5	11.1	12.7	8.2	9.7	10.3	7.4	7.3	2.8	1.7	-3.2	-7.3	-18.1	-31.3	-44.3	-62.8	-86.6
Leq,d	17.5	-29.1	-23.2	-19.4	-6.6	-1.8	-8.0	-0.3	1.4	0.1	1.6	1.4	3.2	4.0	4.7	8.3	9.8	5.2	6.6	8.6	5.6	5.3	1.8	0.2	-5.6	-11.6	-25.5	-42.4	-60.0	-84.0	
Leq,d	25.3	-23.8	-17.8	-13.9	-0.9	4.0	-2.0	5.8	7.7	6.6	7.5	7.4	9.2	10.5	11.2	14.9	18.2	13.9	15.5	16.4	13.9	14.3	10.5	10.4	6.0	2.2	-8.2	-20.8	-33.2	-50.5	-72.5
Leq,d	17.9	-29.9	-23.9	-19.9	-6.9	-2.0	-8.1	-0.1	1.7	0.5	2.4	2.2	3.9	4.7	5.4	8.9	10.3	5.7	7.1	9.0	6.0	5.6	0.7	-1.0	-6.4	-11.8	-24.1	-38.8	-54.0	-75.2	
Leq,d	16.1	-30.3	-24.4	-20.6	-7.8	-3.0	-9.2	-1.4	0.4	-0.9	0.8	0.7	2.4	3.2	3.9	7.5	8.9	4.3	5.7	6.2	3.1	2.6	-2.4	-4.2	-9.1	-15.4	-29.0	-45.7	-63.6	-88.5	
Leq,d	26.0	-22.0	-16.2	-12.4	0.4	5.2	-0.9	7.0	8.8	7.6	9.3	9.2	11.0	11.9	12.7	16.4	18.1	13.7	15.7	16.4	15.3	15.5	11.3	10.7	6.4	3.3	-5.8	-16.0	-24.8	-37.6	-54.3
Leq,d	25.4	-21.7	-15.9	-12.1	0.7	5.5	-0.7	7.2	8.9	7.7	9.3	9.2	11.0	11.8	12.6	16.3	18.0	13.6	15.1	15.9	13.1	13.3	9.2	8.7	4.8	2.1	-6.6	-16.8	-25.6	-38.4	-55.2
Leq,d	26.2	-24.6	-18.6	-14.6	-1.6	3.4	-2.6	5.4	7.3	6.3	8.3	8.3	10.3	11.3	12.3	16.2	18.1	14.0	16.2	17.4	15.1	15.8	12.2	12.3	8.9	6.8	-1.4	-11.0	-19.5	-32.1	-48.8
Leq,d	15.9	-32.6	-26.6	-22.6	-9.6	-4.7	-10.7	-2.7	-0.8	-2.0	0.0	-0.1	1.7	2.6	3.4	7.1	8.6	4.2	5.7	6.4	3.4	3.0	-2.0	-3.9	-10.1	-16.3	-30.2	-48.1	-67.7	-94.9	
Leq,d	16.2	-31.9	-25.9	-21.9	-9.0	-4.1	-10.1	-2.1	-0.3	-1.4	0.4	0.3	2.1	2.9	3.6	7.2	8.7	4.1	5.5	7.6	4.5	4.0	-1.2	-3.2	-9.7	-15.9	-29.6	-46.7	-65.2	-90.7	
Leq,d	25.3	-25.3	-19.3	-15.3	-2.3	2.7	-3.3	4.7	6.6	5.6	7.6	7.6	9.6	10.6	11.5	15.5	17.3	13.2	15.4	16.5	14.2	14.8	11.1	11.1	7.5	5.0	-3.6	-13.8	-23.1	-36.8	-54.9
Leq,d	24.3	-27.2	-21.2	-17.2	-4.2	0.8	-5.2	2.8	4.7	3.7	5.7	5.7	7.7	8.6	9.6	13.6	16.8	12.7	14.6	15.8	13.5	14.1	10.3	10.1	6.3	3.4	-6.2	-18.2	-29.5	-45.7	-66.7
Leq,d	26.2	-26.0	-20.0	-16.0	-3.0	2.0	-4.0	4.0	5.9	4.9	6.9	6.9	8.9	9.8	10.8	16.5	18.4	14.3	16.3	17.5	15.3	16.0	12.5	12.8	9.3	6.3	-3.1	-14.3	-24.8	-39.7	-59.0
Leq,d	23.8	-27.6	-21.6	-17.6	-4.6	0.3	-5.7	2.3	4.3	3.2	5.2	5.2	7.2	8.2	9.1	13.1	16.3	12.3	14.2	15.3	12.9	13.4	9.5	9.2	5.4	2.1	-7.6	-20.1	-32.1	-49.2	-71.2
Leq,d	17.7	-30.3	-24.3	-20.3	-7.4	-2.5	-8.5	-0.5	1.3	0.1	2.0	1.9	3.6	4.4	5.1	8.7	10.2	5.6	7.0	8.8	5.8	5.4	0.4	-1.3	-7.1	-12.5	-24.8	-40.0	-55.8	-77.8	
Leq,d	25.7	-23.7	-17.8	-13.9	-1.0	3.8	-2.4	5.4	7.1	5.8	7.0	6.8	8.5	9.4	10.1	13.7	19.0	14.7	16.3	17.2	14.7	14.9	10.8	10.2	5.9	2.3	-7.9	-20.4	-32.6	-49.8	-71.5
Leq,d	19.0	-28.2	-22.4	-18.6	-5.8	-1.0	-7.2	0.6	2.3	1.1	2.7	2.5	4.3	5.0	5.6	9.2	10.6	7.4	8.9	11.0	8.1	7.8	2.8	1.1	-4.9	-10.5	-23.0	-37.9	-52.9	-73.8	
Leq,d	16.2	-30.3	-24.5	-20.7	-7.8	-3.0	-9.2	-1.4	0.4	-0.8	0.9	0.8	2.5	3.2	3.9	7.5	8.9	4.4	5.7	6.2	3.9	3.4	-1.8	-3.7	-8.9	-15.2	-28.7	-45.3	-63.0	-87.6	

170 Units Date Palm Dr Cathedral City Noise
Contribution spectra - 001 - Date Palm Apartments: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Leq,d	17.8	-30.1	-24.1	-20.1	-7.1	-2.2	-8.3	-0.3	1.5	0.3	2.2	2.0	3.8	4.5	5.2	8.8	10.2	5.6	6.9	8.8	5.8	5.4	0.5	-1.2	-7.0	-12.3	-24.6	-39.5	-55.0	-76.5	
Leq,d	16.1	-30.2	-24.4	-20.6	-7.8	-3.0	-9.2	-1.4	0.4	-0.9	0.8	0.6	2.4	3.1	3.8	7.4	8.9	4.3	5.7	6.2	3.1	2.6	-2.4	-4.2	-9.3	-15.6	-29.2	-46.1	-64.3	-89.5	
Leq,d	30.1	-23.8	-17.8	-13.8	-0.8	4.2	-1.7	6.3	8.3	7.3	9.4	9.6	11.7	12.8	14.1	18.3	20.6	17.2	20.1	22.6	20.4	21.0	17.4	17.6	14.3	12.2	4.2	-5.3	-13.4	-25.7	-42.0

Project:	Sound Library
Job Number:	0000-2020-02
Site Address/Location:	Gilbert, AZ
Date:	09/18/2018
Field Tech/Engineer:	Robert Pearson
Source/System:	Carrier 50TFQ0006 - 5 Ton
General Location:	Measured @ 3'
Sound Meter:	NTi XL2 **SN:** A2A-05967-E0
Settings:	A-weighted, slow, 1-sec, 10-sec duration
Meteorological Cond.:	90 degrees, 0 mph wind

Site Observations:

Clear sky, measurements were performed at 3ft from source.

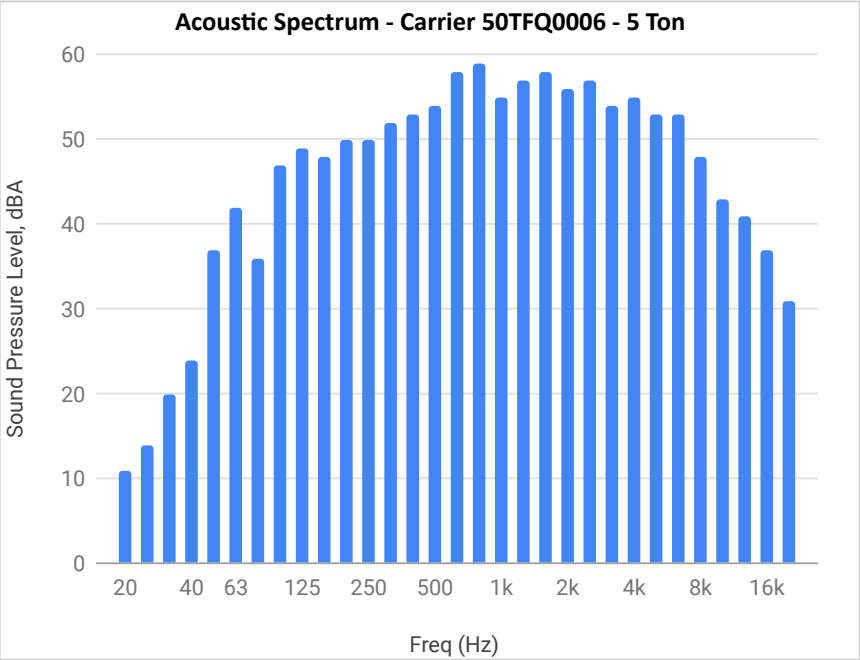
Leq	Lmin	Lmax
67.7	66.9	68.5

Ln 2	Ln 8	Ln 25	Ln 50	Ln 90	Ln 99
0.0	0.0	0.0	0.0	0.0	0.0

Table 1: Summary Measurement Data

Source/System	Overall Source	Overall dB(A)	3rd Octave Band Data (dBA)																														
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	12.5	1.6k	2k	2.5k	3.15	4k	5k	6.3k	8k	10k	12.5	16k	20k
Carrier 50TFQ0006 - 5 Ton	HVAC	67.7	11.0	14.0	20.0	24.0	37.0	42.0	36.0	47.0	49.0	48.0	50.0	50.0	52.0	53.0	54.0	58.0	59.0	55.0	57.0	58.0	56.0	57.0	54.0	55.0	53.0	53.0	48.0	43.0	41.0	37.0	31.0

Figure 1: Commercial Air Conditioner - Carrier 50TFQ0006 - 5 Ton



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Project: Car idle Ref Level
Site Location: Gilbert, AZ
Date: 9/18/2018
Field Tech/Engineer: Robert Pearson
Source/System: Hyundai Sonata

Location: Parking Lot
Sound Meter: NTi XL2 **SN:** A2A-05967-E0
Settings: A-weighted, slow, 1-sec, 10-sec duration
Meteorological Cond.: 90 degrees F, 0 mph wind

Site Observations:
Clear sky, measurements were performed at 3ft of source. Two measurments taken one in the front and one in the back and then Averaged out.

Table 1: Summary Measurement Data

Source	System	Overall dB(A)	3rd Octave Band Data (dBA)																															
			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1K	1.25K	1.6K	2K	2.5K	3.15K	4K	5K	6.3K	8K	10K	12.5K	16K	20K
Hyundai Sonata	Motor/Tailpipe	58.7	13	32	15	21	36	37	39	37	41	38	44	39	41	45	45	49	47	47	48	46	49	50	47	45	42	39	37	34	32	30	29
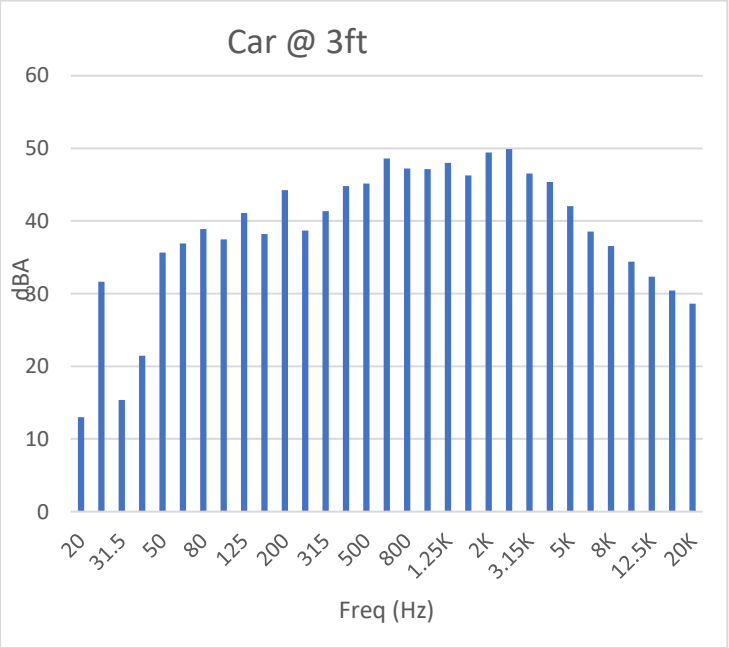
Figure 1: Example Measurement Position