Behavioral Health Comprehensive Treatment Center

Noise Impact Study

County of San Bernardino, CA

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Sound Solutions for Planning and Design

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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 County's Noise Guidelines, the project must demonstrate compliance to the applicable noise criterion as outlined within the County of San Bernardino General Plan 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 the sensitive receptors and the project site; and
- An analysis of construction noise and vibration impacts to the sensitive receptors.

1.2 Site Location and Study Area

The Project site is located at 13333 Palmdale Road in the City of Victorville, CA. The site is located within the jurisdiction of San Bernardino County. See Exhibit A for the location. Existing land uses surrounding the Project site include a commercial use to the north, vacant residential/commercial land to the east, Larrea Middle School to the south, and Silverado High School to the west.

1.3 Proposed Project Description

The proposed Project is the improvement and expansion of the St. John of God Health Care Services center into the San Bernardino County Behavioral Health Comprehensive Treatment Campus. The County intends to develop this site with new treatment facilities and transitional housing for individuals in recovery under the Behavioral Health Continuum Infrastructure Program (BHCIP) and Community Care Expansion (CCE) program.

The proposed Project will be comprised of the following:

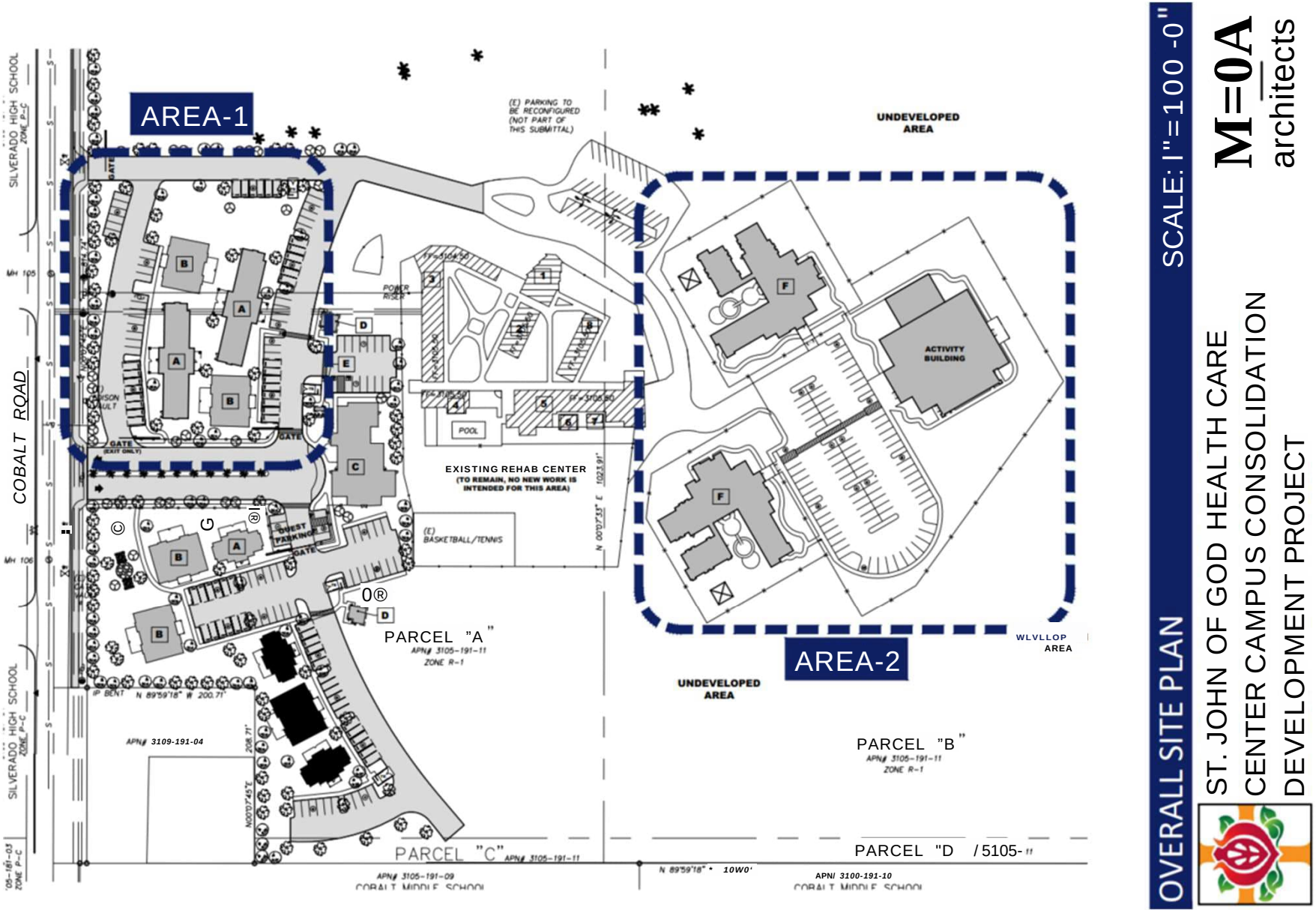
- 3 – Building A Residential Treatment Area 1,740 sq ft/per building = 5,220 sq ft
- 5 – Building B Residential Treatment Area 2,894 sq ft/per building = 14,4750 sq ft
- 1 – Building C Community Building Area = 6,840 sq ft
- 2 – Building F Adolescent Residential Treatment Facility/Psychiatric Residential Treatment Facility 10,944 sq ft = 21,888 sq ft
- 2 – Building G Withdrawal Management 4,566 sq ft/per building = 9,132 sq ft
- 1 – Building H Recreation /Activity Building = 13,662 sq ft

Exhibit A

Location Map

Exhibit B

Site Plan



OVERALL SITE PLAN

SCALE: I"=100 -0"

M=0A architects

ST. JOHN OF GOD HEALTH CARE
CENTER CAMPUS CONSOLIDATION
DEVELOPMENT PROJECT

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.

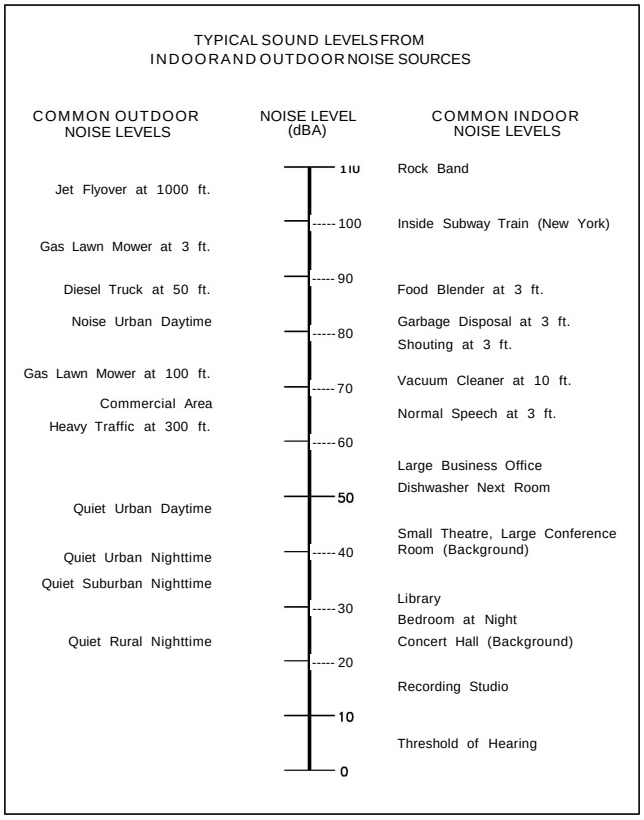
2.1 Sound, Noise, and Acoustics

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 at 20 Hz 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 its 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 Sensitive Receptors

Noise-sensitive land uses include residential (single and multi-family dwellings, mobile home parks, dormitories, and similar uses); transient lodging (including hotels, motels, and similar uses); hospitals, nursing homes, convalescent hospitals, and other facilities for long-term medical care; public or private educational facilities, libraries, churches, and places of public assembly.

2.6 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 a 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: Decibel Changes and Loudness

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud
Source: https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm	

2.7 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 the addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and 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.

2.8 Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors: volume of traffic; the speed of traffic; auto, medium truck (2-axle), and heavy truck percentage (3-axle and greater); and sound propagation. Higher traffic volume, 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.

2.9 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.

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 wavefront, 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 wavefront. 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 wavefront. 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 to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

The proposed Project is within the City of Victorville on a parcel owned by San Bernardino County, California. 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 for regulating noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible for regulating 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 Housing and Urban Development (HUD) is responsible for establishing noise regulations as it relates to exterior/interior noise levels for new HUD-assisted housing developments near high noise areas.

The federal government advocates that local jurisdictions use their land use regulatory authority to arrange new developments in such a way that "noise sensitive" uses are either prohibited from being constructed adjacent to a highway or 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.

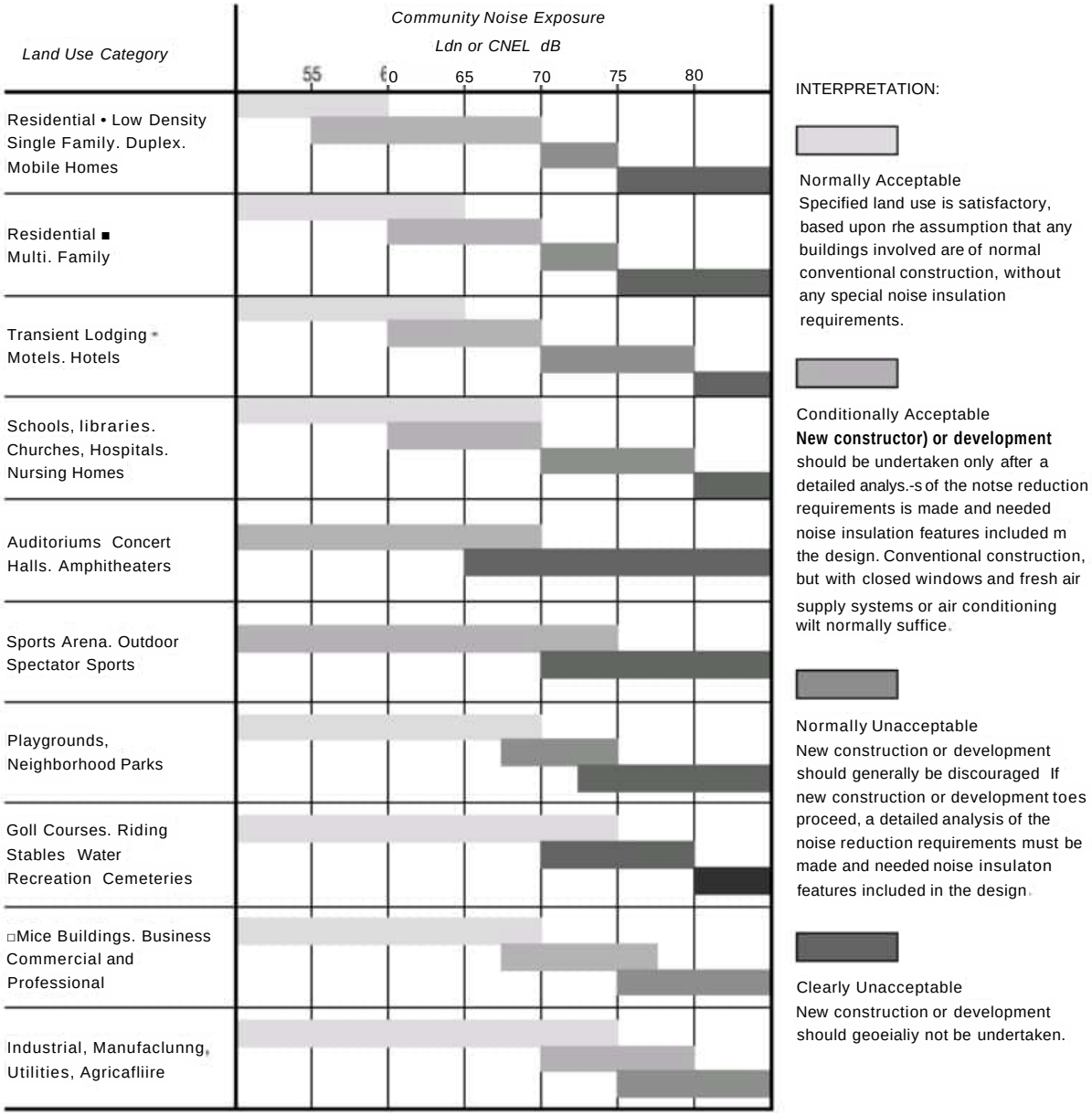
4.2 State Regulations

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 delineate the 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.

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.

Exhibit D: Land Use Compatibility Guidelines



4.3 County of San Bernardino Noise Regulations

The County of San Bernardino outlines their noise regulations and standards within the Policy Plan Hazards Element from the General Plan, and the Noise Ordinance from the Municipal Code.

County of San Bernardino General Plan

Applicable policies and standards governing environmental noise in the County of San Bernardino are set forth in the Policy Plan Hazards Element. The County has outlined goals and policies to reduce potential noise impacts and are presented below:

Goals, Policies, and Implementation Measures

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

Goal HZ-2 Human-generated Hazards: People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.

Policy HZ-2.6: Coordination with transportation authorities. We collaborate with airport owners, FAA, Caltrans, SBCTA, SCAG, neighboring jurisdictions, and other transportation providers in the preparation and maintenance of, updates to transportation-related plans and projects to minimize noise impacts and provide appropriate mitigation measures.

Policy HZ-2.7: Truck delivery areas. We encourage truck delivery areas to be located away from residential properties and require associated noise impacts to be mitigated.

Policy HZ-2.8: Proximity to noise generating uses. We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.

Policy HZ-2.9: Control sound at the source. We prioritize noise mitigation measures that control sound at the source before buffers, soundwalls, and other perimeter measures.

Policy HZ-2.10: Agricultural operations. We require new development adjacent to existing conforming agricultural operations to provide adequate buffers to reduce the exposure of new development to operational noise, odor, and the storage or application of pesticides or other hazardous materials.

County of San Bernardino Municipal Code

Section 83.01.080 –Noise

This Section establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses.

(a) *Noise Measurement*. Noise shall be measured:

(1) At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise-sensitive land uses;

(2) With a sound level meter that meets the standards of the American National Standards Institute (ANSI § SI4 1979, Type 1 or Type 2);

(3) Using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).

(b) *Noise Impacted Areas*. Areas within the County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Subdivision (d) (Noise Standards for Stationary Noise Sources) and Subdivision (e) (Noise Standards for Adjacent Mobile Noise Sources), below. New development of residential or other noise-sensitive land uses shall not be allowed in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise-sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.

(c) *Noise Standards for Stationary Noise Sources*.

(1) *Noise Standards*. Table 2 (Table 83-2 in the Municipal Code) describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties.

Table 2: Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	Noise Level Limit (Leq dBA)	
	7:00 a.m. - 10:00 p.m.	10:00 p.m. - 7:00 a.m.
Residential	55	45
Professional Services	55	55
Other Commercial	60	60
Industrial	70	70

(2) Noise Limit Categories. No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

1. The noise standard for the receiving land use as specified in Subdivision (b) (Noise-Impacted Areas), above, for a cumulative period of more than 30 minutes in any hour.
2. The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour.
3. The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour.
4. The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.

5. The noise standard plus 20 dB(A) for any period of time.

(d) Noise Standards for Adjacent Mobile Noise Sources. Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 3 (Table 83-3 in the Municipal Code).

Table 3: Noise Standards for Adjacent Mobile Noise Sources

Land Use		Ldn (or CNEL) dBA	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single and multi-family, duplex, mobile homes	45	60[3]
Commercial	Hotel, motel, transient housing	45	60[3]
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school, religious institution, library	45	65
Open Space	Park	N/A	65

Notes:
[1] The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.
[2] The outdoor environment shall be limited to
- Hospital/office building patios
- Mobile home parks
- Multi-family private patios or balconies
- Park picnic areas
- Private yard of single-family dwellings
- School playgrounds

[3] An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

(e) *Increases in Allowable* Noise Levels. If the measured ambient level exceeds any of the first four noise limit categories in Subdivision (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in Subdivision (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

(f) *Reduction in Allowable Noise Levels.* If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 2 shall be reduced by five dB(A).

(g) *Exempt Noise.* The following sources of noise shall be exempt from the regulations of this Section:

(1) Motor vehicles not under the control of the commercial or industrial use.

(2) Emergency equipment, vehicles, and devices.

(3) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(h) Noise Standards for Other Structures. All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Table 4: Noise Standards for Other Structures

Typical Uses	12-Hour Equivalent Sound Level (Interior) dBA Ldn
Educational institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	55
Retail stores, restaurants, etc.	60
Other areas for manufacturing, assembly, testing, warehousing, etc.	70

In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

Section 83.01.090 –Vibration

(a) Vibration Standard: No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to 0.2 inch per second measured at or beyond the lot line.

(b) Vibration Measurement. Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district.

(c) Exempt Vibrations. The following sources of vibration shall be exempt from the regulations of this Section.

(1) Motor vehicles not under the control of the subject use.

(2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

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. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as the 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

All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). MD noise measurement procedures are presented below:

- The sound level meter was calibrated (NTI XL2) before and after the measurement
- Following the calibration of equipment, a windscreen was placed over the microphone
- Frequency weighting was set on “A” and slow response
- Results of the noise measurements were recorded on field data sheets
- Temperature and sky conditions were observed and documented

5.2 Noise Measurement Locations

Three (3) short-term 15-minute noise measurements were conducted at or near the Project site. The noise monitoring locations were selected to obtain a baseline of the existing noise environment. Appendix A includes photos, the field sheet, and measured noise data. Exhibit E illustrates the location of the measurements.

5.3 SoundPLAN Noise Model (Operational Noise)

SoundPLAN acoustical modeling software was utilized to model Project operational noise at nearby sensitive receptors. The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. It allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. It also calculates noise level increases due to the reflection of noise from hard surfaces.

Measured and referenced sound level data was utilized to model the various stationary on-site noise sources associated with Project operation (i.e., HVAC and parking movements).

Noise associated with proposed parking areas was modeled using the SoundPLAN parking tool. The Project proposes to add 228 new parking spaces to the site. The Trip Generation Memo estimates 359 daily trips to and from the Project site. Assuming 10% of trips occur during the peak hour, there would be approximately 0.16 movements per space per hour. As a worst-case, the parking lot was modeled with a lot-wide average of 1 movement per space per hour. To estimate HVAC noise, MD assumed 1-ton of HVAC per 350 sq-ft of climate-controlled area. Each proposed building was assumed to require one to eight 5-ton HVAC units on the roof of each building, depending on square footage. The rooftop units were modeled as continuous point sources each with a sound power level of 78 dBA. Modeling assumptions are summarized in Table 5. SoundPLAN noise modeling input and results are provided in Appendix B.

Table 5: SoundPLAN Modeling Assumptions

Noise Source	Source Type	Reference Level	Descriptor
HVAC	Point Source	78	Lw
Parking	Area (Parking Tool)	1	Movements per hr
Source: See Appendix B.			

5.4 Traffic Noise Prediction Modeling

The FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) was utilized to model future traffic noise levels on the Project site and existing and existing plus Project traffic noise volumes along roadways affected by Project generated vehicle traffic. The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL).

Project-generated vehicle traffic will result in an incremental increase in ambient noise levels. To determine the Project's noise impact to the surrounding land uses, MD generated noise contours for existing ADT, and existing plus Project ADT. Traffic volumes were obtained from a traffic study performed by Counts Unlimited, Inc in 2013, and the Project's trip generation was prepared by Integrated Engineering Group (IEG). The current year (2025) traffic count along Cobalt Road was calculated assuming a 3% increase in traffic per year. Table 6 indicates the roadway parameters and vehicle distribution utilized.

Noise contours are used to provide a characterization of sound levels experienced at a set distance from the centerline of a subject roadway. They are intended to represent a worst-case scenario. Noise contours are developed for comparative purposes and are used to demonstrate potential increases/decreases along subject roadways as a result of a Project. The referenced traffic data and traffic noise calculation worksheets outputs are located in Appendix C.

- Roadway classification – (e.g., freeway, major arterial, arterial, secondary, collector, etc.),
- Roadway Active Width – (distance between the center of the outermost travel lanes on each side of the roadway)

- Average Daily Traffic Volumes (ADT), Speeds, Percentages of autos, medium and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g., soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period

Table 6: Roadway Parameters and Vehicle Distribution

Roadway	Existing ADT[1]	Existing + Project ADT[2]	Speed (MPH)	Site Conditions
Cobalt Road	2,271	2,630	40	Hard
Freeway Motor-Vehicle Type		**Total % of Traffic Flow**		
Automobiles		97.4		
Medium Trucks		1.84		
Heavy Trucks		0.74		

Notes:
[1] Existing ADT taken from Counts Unlimited, Inc.
[2] Project trip generation was provided in the trip generation assessment prepared for the Project by IEG.

5.5 Interior Noise Modeling

The interior noise level is the difference between the projected exterior noise level at the structure's facade and the noise reduction provided by the structure itself. Typical building construction will provide a conservative 12 dBA noise level reduction with a "windows open" condition and a very conservative 20 dBA noise level reduction with "windows closed". MD estimated the interior noise level by subtracting the building shell design from the predicted exterior noise level.

5.6 Construction Noise Modeling

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Construction activities are anticipated to include four phases site preparation, grading, building construction, and paving.

Construction noise levels were calculated for each phase based on CalEEMod Air Quality Model assumptions. All equipment was assumed to be situated at the edge of the Project site closest to the sensitive receptor. Construction equipment typically moves back and forth across the site, so this is a conservative assumption. Construction worksheets are provided in Appendix C.

6.0 Existing Noise Environment

Three (3) 15-minute noise measurements were conducted at the Project site to document the existing noise environment. The measurements include the 15-minute Leq, Lmin, Lmax, and other statistical data (e.g. L2, L8). The results of the noise measurement are presented in Table 7. Noise measurement field sheets are provided in Appendix A.

Table 7: Short-Term Noise Measurement Data (dBA)[1]

Location	Start Time	Stop Time	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
NM1	9:12 AM	9:27 AM	55.2	69.9	43.4	63.8	59.1	55.3	51.2	44.9
NM2	9:37 AM	9:52 AM	48.0	58.3	44.1	51.4	50.1	48.5	47.3	45.6
NM3	10:04 AM	10:19 AM	66.0	81.4	44.1	76.5	71.3	60.8	53.6	47.0

Notes:
1. Short-term noise monitoring locations are illustrated in Exhibit E.

The data presented in Table 7 indicate that the ambient noise level in the Project vicinity ranged from 48 to 66 dBA Leq. Field data and notes provided in Appendix A indicate that the dominant noise source is traffic along Cobalt Road.

Exhibit E

Measurement Locations

= Short-Term Monitoring Locations

7.0 Future Noise Environment Impacts and Mitigation

This assessment analyzes future noise impacts to sensitive receptors and the Project and compares the results to the County's Noise Standards. The analysis details the estimated exterior noise levels associated with traffic from adjacent roadway sources. The County has established different significance thresholds for different types of noise impacts.

7.1 Off-Site Traffic Noise Impact

The potential off-site noise impacts caused by the increase in vehicular traffic as a result of the Project were calculated at the nearest sensitive receptor to Cobalt Road, the residence located at 13290 Arvila Drive, Victorville, CA. This residence has a wall surrounding the property. The noise attenuation due to the wall was calculated and is included in the traffic calculations. The noise level at this residence both with and without Project-generated vehicle traffic were compared and the increase was calculated. The distance to the 55, 60, 65, and 70 dBA CNEL noise contours are also provided for reference (Appendix C). Noise contours were calculated for the following scenarios and conditions:

- Existing Condition: This scenario refers to the existing traffic noise condition and is demonstrated in Table 8.

- Existing + Project Condition: This scenario refers to the existing plus Project traffic noise condition and is demonstrated in Table 8.

Section 83.01.080(d) of the San Bernardino County Municipal Code prohibits mobile noise sources from exceeding 60 dBA CNEL at residential uses. As shown in Table 8, the addition of Project-generated vehicle traffic on Cobalt Road would not result in the noise level at the residence increasing above 60 dBA CNEL. Thus, the impact is less than significant.

Table 8: Change in Existing Noise Levels as a Result of Project Generated Traffic[1]

Roadway	Segment	Modeled Noise Levels (dBA CNEL) at Nearest Residence			
		Existing without Project	Existing with Project	Change in Noise Level	Exceeds 60 dBA CNEL[2]
Cobalt Road	West of Project site	53.3	54.0	0.7	**No**

Notes:
[1] FHWA roadway noise modeling worksheets are provided in Appendix C.
[2] Allowable noise threshold at residential uses due to mobile noise sources. See Section 4, Table 3.

7.2 On-Site Traffic Noise Impact

Future noise levels associated with traffic were modeled using the FHWA Traffic Noise Model calculations in order to evaluate the Project in light of the County's land use compatibility guidelines presented in Exhibit D of this report as they apply to future traffic noise impacts to the proposed Project. The Project is currently within the normally acceptable range for residential uses at 58.8 dBA CNEL. It

will not change due to the increase in traffic levels from the Project. Thus, the traffic due to the Project will not have a significant impact on the Project.

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

The nearest sensitive receptors to the Project site are Silverado High School to the west and Larrea Middle School to the south. Worst-case operational noise was modeled using SoundPLAN acoustical modeling software. Two (2) receptors representative of the adjacent school uses were modeled using the SoundPLAN noise model to evaluate the proposed Project's operational impact. A receptor is denoted by a yellow dot, as shown in Exhibit F. The results are in Table 9.

Project Operational Noise Levels

Worst-case "project-only" exterior operational noise is presented in Exhibit F. Receptor 1 represents Silverado High School while receptor 2 represents Larrea Middle School. Operational noise levels are expected to reach 45 to 47 dBA Leq.

Project Plus Ambient Operational Noise Levels

The hourly Leq noise level at each receptor location was extrapolated based on MD's noise measurements and typical California traffic patterns. The loudest hourly noise level (the level during the hour of 4PM) was selected to represent the existing ambient noise as a conservative estimate. See Appendix A for hourly dBA Leq calculations at each measurement location. The loudest noise level at Silverado HS (R1) was projected to the façade assuming that the majority of noise at the façade of R1 is due to traffic from Cobalt Road.

Section 83.01.080(h) of the San Bernardino County Municipal Code states that schools shall not exceed 45 dBA LDN interior. Table 9 shows the Existing, Project, and Existing plus Project noise levels at both the exterior and interior of R1 and R2. The construction of the school buildings are assumed to provide a conservative 20 dB noise reduction to the interior of the buildings. Because interior noise in both schools does not exceed 45 dBA Leq during the loudest hour of operation, the 45 dBA LDN interior requirement will be met at both sensitive receptors. Thus, the impact is less than significant.

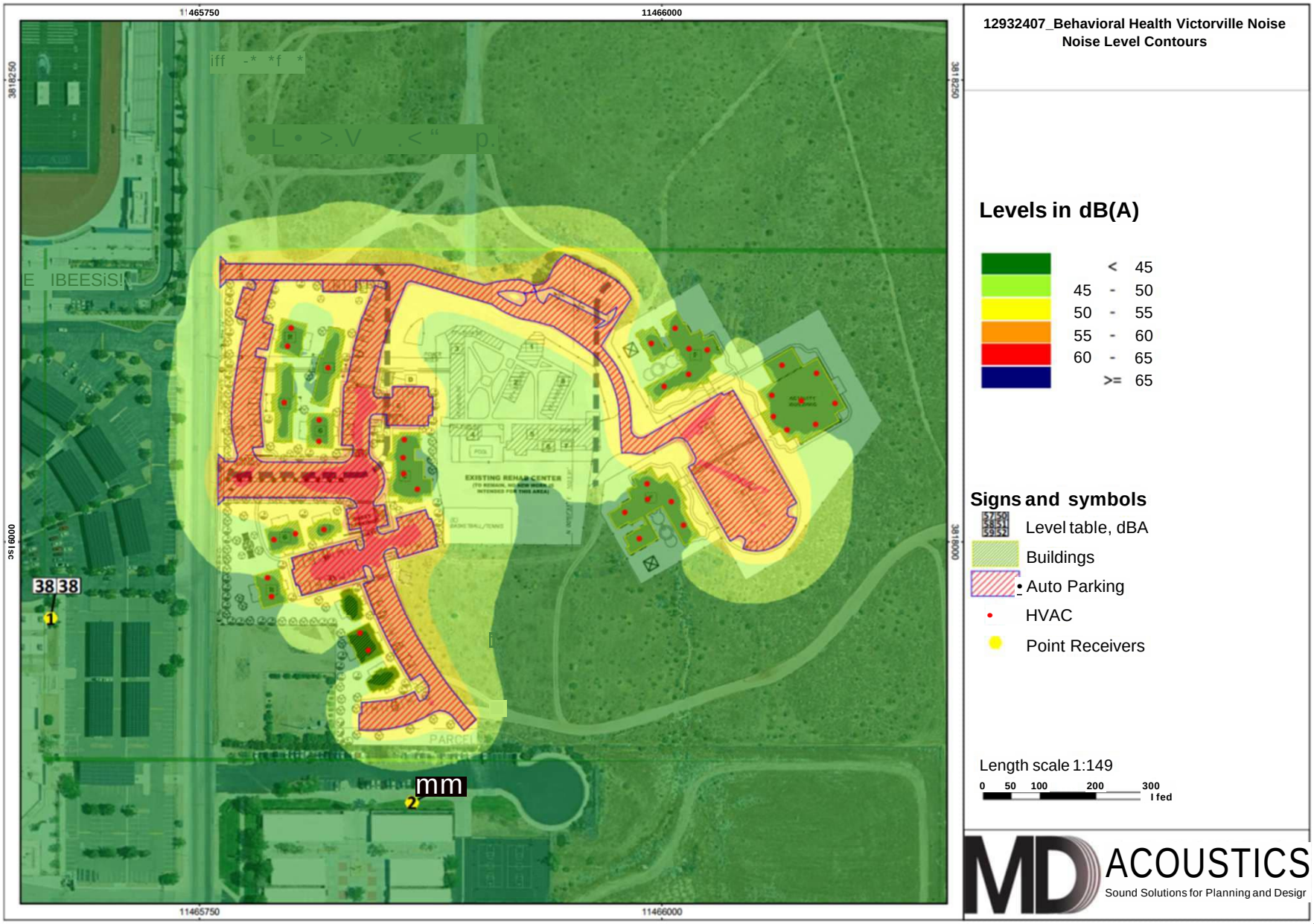
Table 9: Operational Noise Levels (dBA, Leq)

Receptor[1]	Existing Ambient Noise Level[2]	Project Noise Level[3]	Total Combined Exterior Noise Level	Total Combined Interior Noise Level	Exceeds 45 dBA LDN Interior
1	49	38	49	29	**No**
2	51	41	51	31	**No**

Notes:
1. Receptor 1 represents Silverado HS, while receptor 2 represents Larrea MS.
2. See Table 6 for existing ambient level. The existing ambient noise for R1 was calculated using NM3 and a sound attenuation formula.
3. See Exhibit F for the operational noise level projections at said receptors.

Exhibit F

Operational Noise Levels



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 10.

Table 10: 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 County's Municipal Code (Section 83.01.080(g)(3)). Construction is anticipated to occur during the permissible hours (7 a.m. to 7 p.m.) according to the County's Municipal Code. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing within the Project vicinity. The construction noise impact is considered less than significant; however, construction noise level projections are provided.

The closest sensitive land use to the Project is Larrea Middle School to the south of the site. The school is an average of 540 feet away from construction activities and as close as 120 feet from construction activities.

Construction equipment was taken from the Project's CalEEMod. 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 are in Table 11. A likely worst-case construction noise scenario assumes equipment operating as close as 120 feet and an average of 540 feet from the property line of the nearest sensitive receptor, the school to the south. The Lmax levels represent maximum levels when construction occurs adjacent to the residential receptors. Leq levels represent the average construction noise level during each phase. The construction noise calculation output worksheet is located in Appendix C.

Table 11: Construction Noise Level by Phase (dBA, Leq)

Activity	Noise Levels at Nearest Sensitive Receptor	
	Leq	Lmax
Site Preparation	60	74
Grading	61	75
Building Construction	59	74
Paving	55	73
Architectural Coating	47	68
Notes: Construction Modeling Worksheets are provided in Appendix C.		

As shown in Table 9, Project construction noise will range between 47 to 61 dBA Leq and 68 to 75 dBA Lmax at the nearest sensitive receptor.

The Project will be required to adhere to the allowed times for construction outlined in the Municipal Code in Section 83.01.080(g)(3). This impact is less than significant, and no mitigation is required.

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 vibratory roller. A large vibratory roller has a vibration impact of 0.21 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 12 (below) provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 12: 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 13 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 13: 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
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
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.

The nearest existing building to the Project site is Larrea Middle School located as close as 120 feet south of the site. At a distance of 120 feet, a vibratory roller would yield a worst-case 0.037 PPV (in/sec) which may be perceptible but below the threshold of any risk of damage for modern buildings. Section 83.01.090(c)(2) exempts vibration from temporary construction activities from the vibration thresholds outlined in the San Bernardino County Municipal Code. Thus, the impact is less than significant and no mitigation is required.

9.0 References

State of California Building Standards Code, Title 24.

County of San Bernardino: General Policy Plan Hazards Element. October 2020.

County of San Bernardino: Chapter 83.01, Section 83.01.080 Noise of the Municipal Code.

Counts Unlimited, Inc. 2013.

Trip Generation Assessment Memo for San Bernardino County Behavioral Health Comprehensive Treatment Campus Project – Integrated Engineering Group.

SoundPLAN Essential 9.0 Manual - SoundPLAN International, LLC.

Appendix A:

Field Measurement Data

15-Minute Continuous Noise Measurement Datasheet - NM1, NM2, NM3

Project Name:	Behavioral Health Noise
Project: #/Name:	**1293-2024-007**
Site Address/Location:	13333 Palmdale Rd
Date:	**12/30/2024**
Field Tech/Engineer:	

Site Observations:

The temperature was -45°F, with wind speeds ranging from 1-2 mph, and gusts reaching up to 7 mph. NM1: Recorded average sound levels for the facility, providing a reliable representation of the expected ambient noise for the area. No direct interruptions occurred, though two individuals approached and walked near the NM1 location. NM2 and NM3 were recorded without any issues or interruptions.

Sound Meter:	**XL2, NTI**	**SN: A2A-08562-E0**
Settings:	A-weighted, slow, 1-sec, 15-minute interval	
Site Id:	NM1, NM2, NM3	

STICS

MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - NM1, NM2, NM3

Project Name: Behavioral Health Noise

Site Address/Location: 13333 Palmdale Rd

Site Id: NM1, NM2, NM3

Calibrator:

Cal Check: Pre-test: **Post Test:**

Figure 1: NM1

Figure 2: NM2

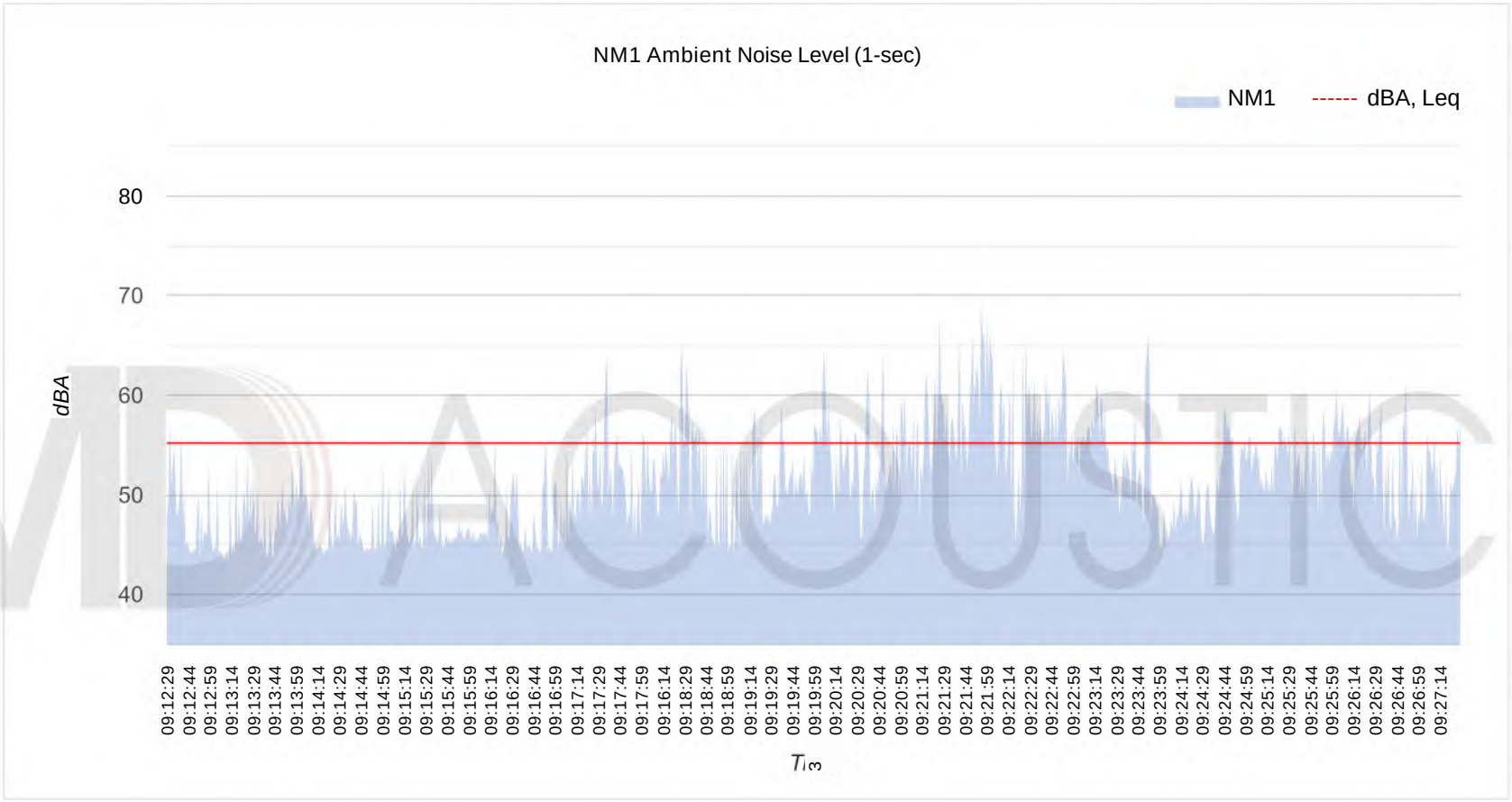
Figure 3: NM3

Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
NMl	9:12 AM	9:27 AM	55.2	69.9	43.4	63.8	59.1	55.3	51.2	44.9
NM2	9:37 AM	9:52 AM	48	58.3	44.1	51.4	50.1	48.5	47.3	45.6
NM3	10:04 AM	10:19 AM	66	81.4	44.1	76.5	71.3	60.8	53.6	47

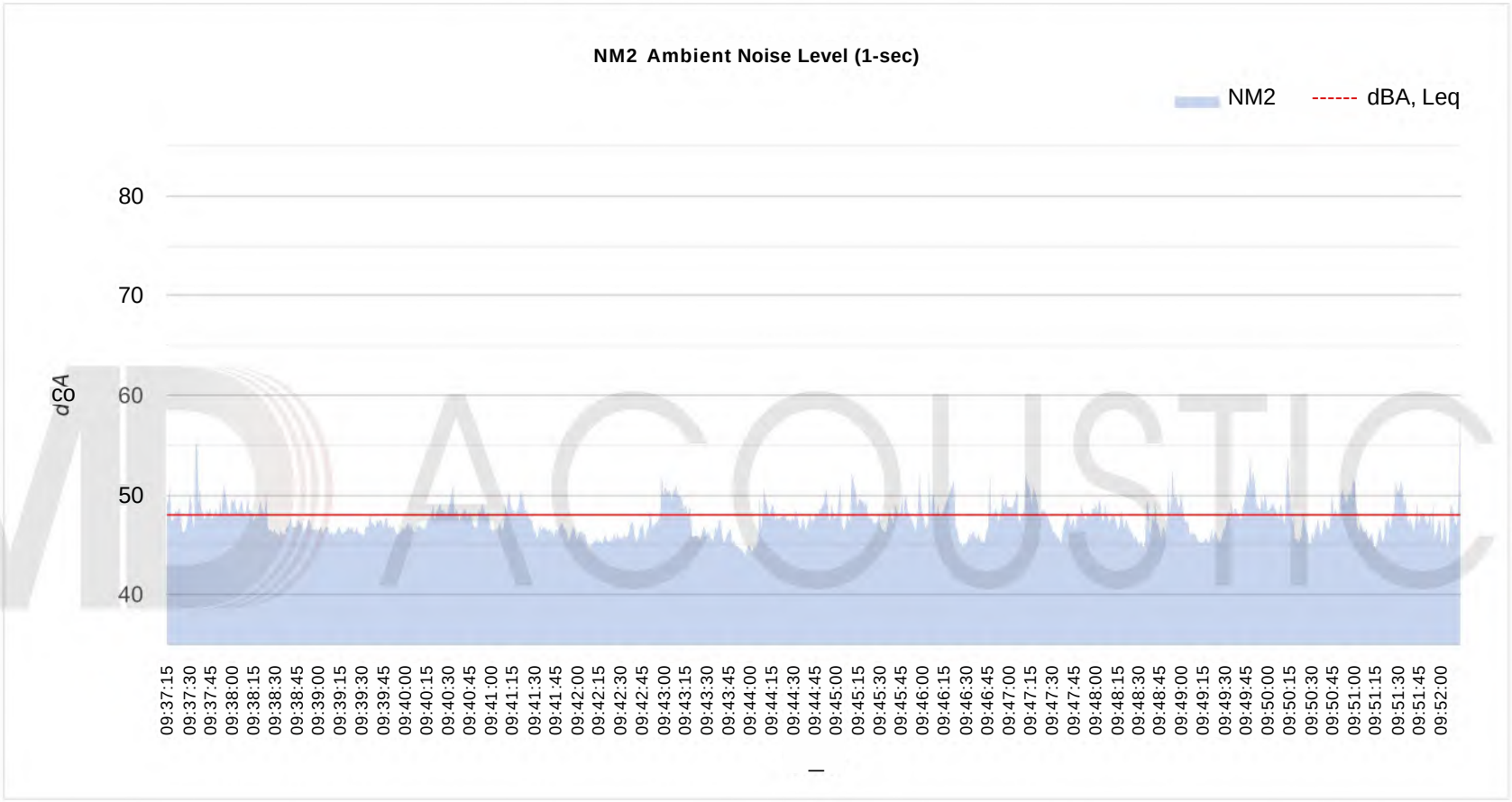
15-Minute Continuous Noise Measurement Datasheet - Cont. - NM1

Project Name:	Behavioral Health Noise	Site Topo:	Buildings 1-2 stories tall with	Noise Source(s) w/ Distance:	
Site Address/Location:	13333 Palmdale Rd	Meteorological Cond.:	45F Winds 0-7MPH	residential and facility noise	
Site Id:	NM1	Ground Type:	buildings and asphalt		



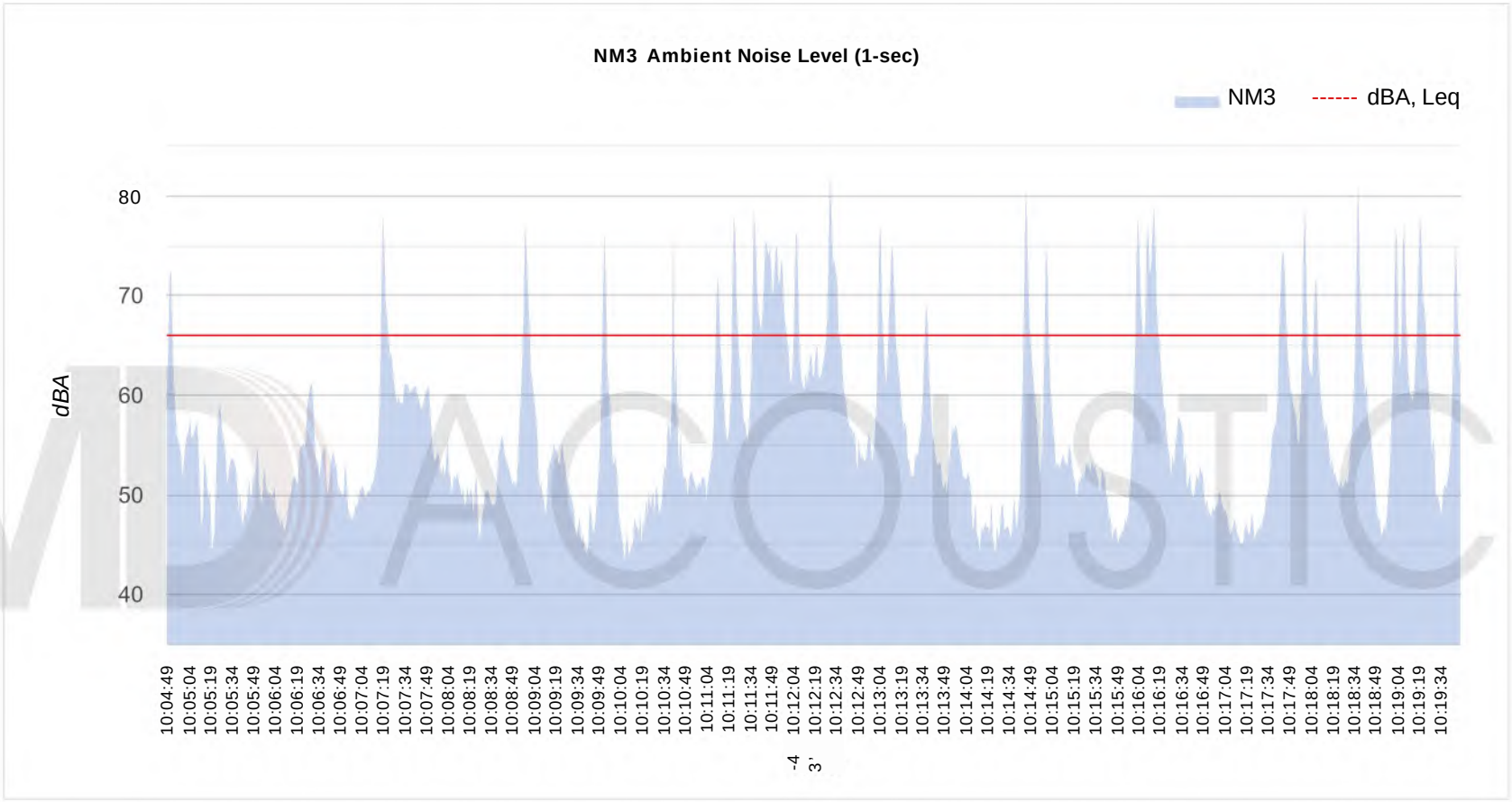
15-Minute Continuous Noise Measurement Datasheet - Cont. - NM2

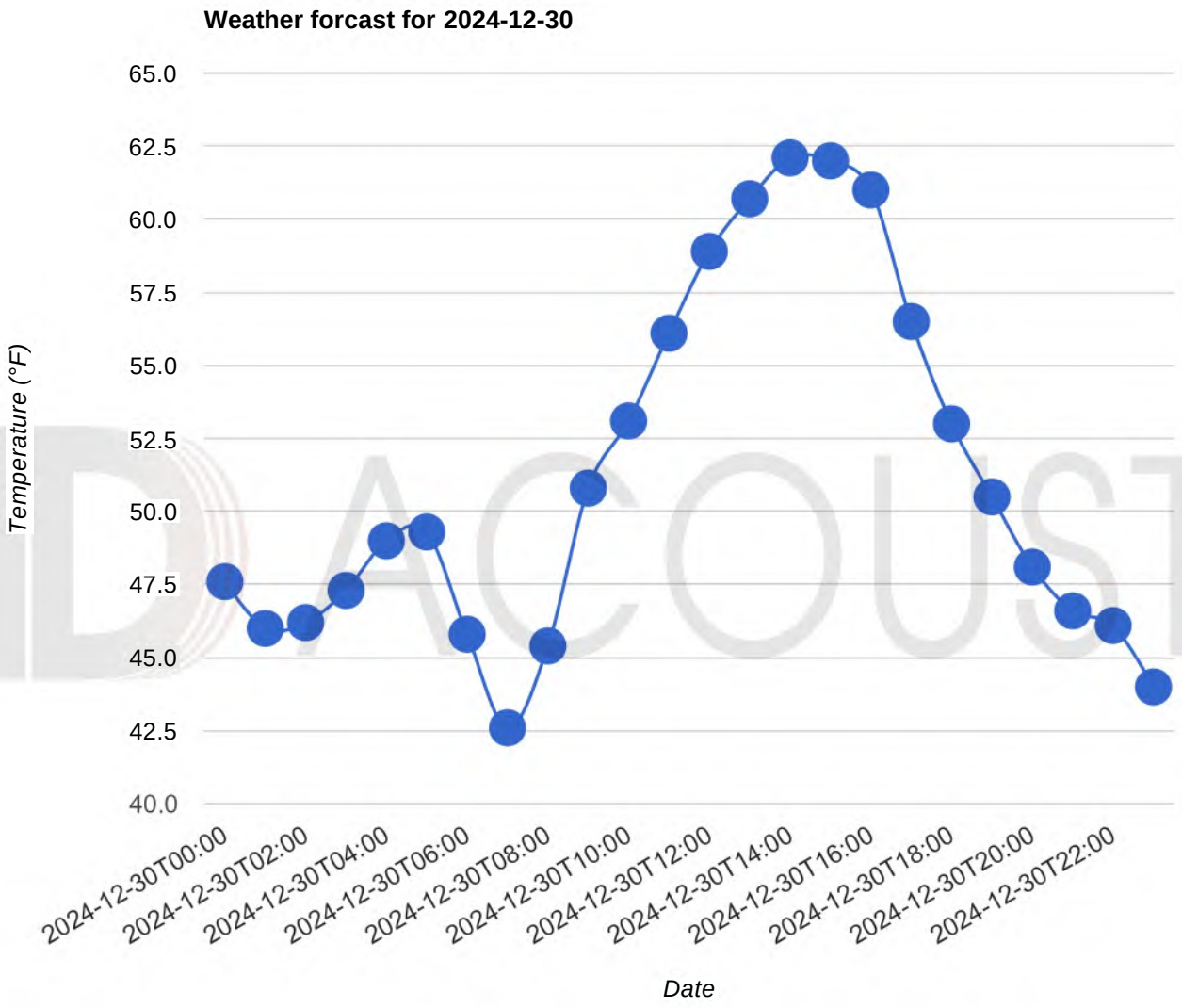
Project Name:	Behavioral Health Noise	**Site Topo:**	Flat desert conditions with adj.	**Noise Source(s) w/ Distance:**	
Site Address/Location:	13333 Palmdale Rd	**Meteorological Cond.:**	45F Winds 0-7MPH	Road and High School noises	
Site Id:	NM2	**Ground Type:**	open soil lot, flat w/ some buildings 1-2 story		



15-Minute Continuous Noise Measurement Datasheet - Cont. - NM3

Project Name:	Behavioral Health Noise	**Site Topo:**	Flat desert conditions w Buildin	**Noise Source(s) w/ Distance:**	
Site Address/Location:	13333 Palmdale Rd	**Meteorological Cond.:**	45F Winds 0-7MPH		Road Noise
Site Id:	NM3	**Ground Type:**	open soil lot, flat w/ some commercial buildings 1-2 story		

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62.5
60.0
57.5
55.0
52.5
50.0
47.5
45.0
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40.0
Temperature (°F)
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2024-12-30T02:00
2024-12-30T04:00
2024-12-30T06:00
2024-12-30T08:00
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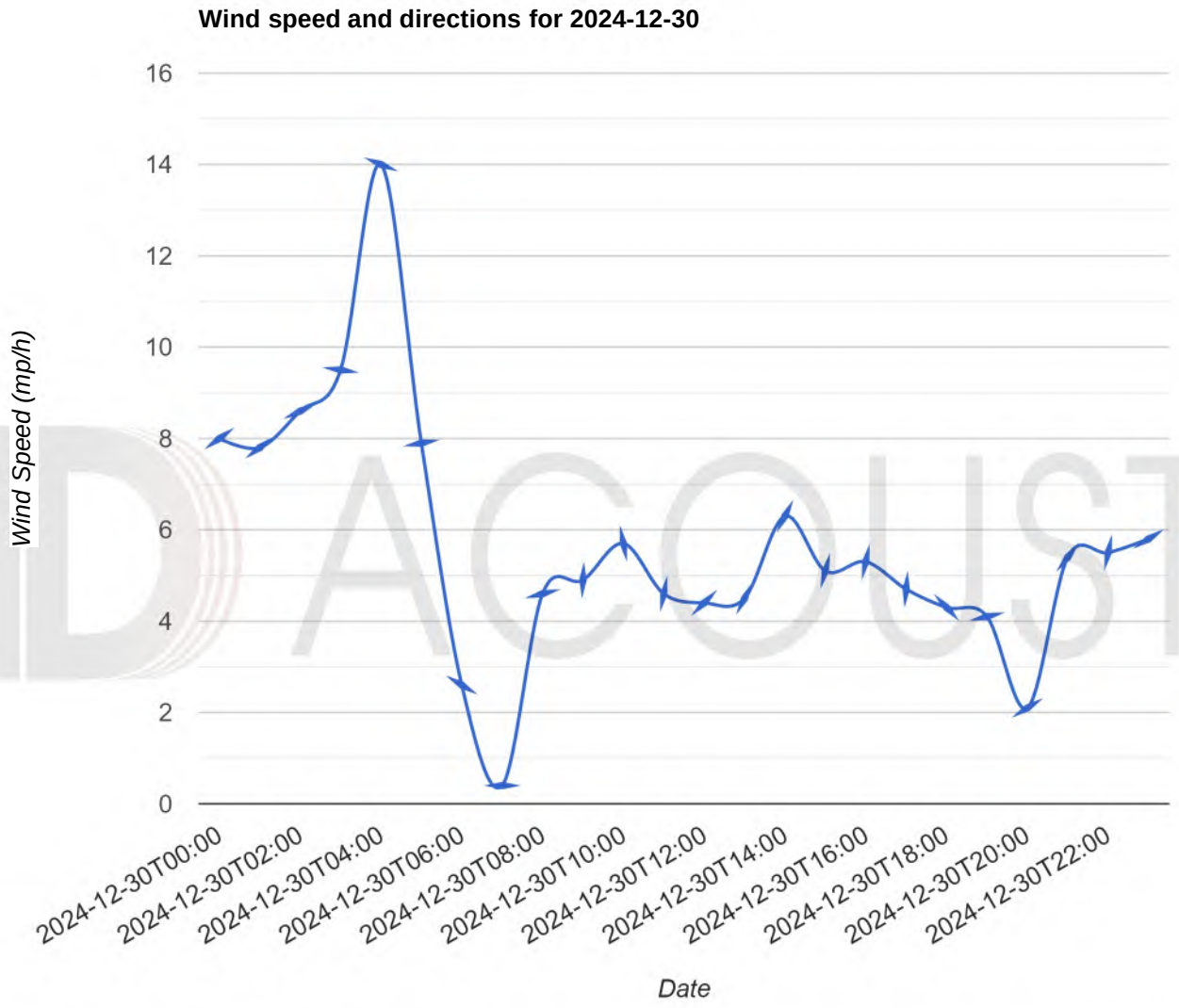
Date



Source: Global Forecast System (GFS) weather forcast model

CNEL CALCULATED FROM SITE MEASUREMENTS

PROJECT: Behavioral Health Center DATE: 22-Jan-25
LOCATION: NM1 JN: 1293-2024-07

TIME BEGINNING	HOURLY LEQ		HOURLY LEQ WEIGHTING	ADJUSTED HOURLY LEQ
0000	50.0		10.0	60.0
0100	47.6		10.0	57.6
0200	46.4		10.0	56.4
0300	44.6		10.0	54.6
0400	45.6		10.0	55.6
0500	49.4		10.0	59.4
0600	55.8		10.0	65.8
0700	58.1		0.0	58.1
0800	56.2		0.0	56.2
0900	55.2	*	0.0	55.2
1000	55.1		0.0	55.1
1100	55.3		0.0	55.3
1200	55.4		0.0	55.4
1300	55.5		0.0	55.5
1400	55.7		0.0	55.7
1500	56.9		0.0	56.9
1600	58.4		0.0	58.4
1700	58.1		0.0	58.1
1800	56.4		0.0	56.4
1900	55.0		5.0	60.0
2000	53.9		5.0	58.9
2100	53.2		5.0	58.2
2200	52.2		10.0	62.2
2300	51.6		10.0	61.6
CNEL (dBA)				58.8

HR. MEASURED: 900 *
MEASURED LEQ: 55.2 *

CNEL CALCULATED FROM SITE MEASUREMENTS

PROJECT: Behavioral Health Center DATE: 22-Jan-25
LOCATION: NM2 JN: 1293-2024-07

TIME BEGINNING	HOURLY LEQ		HOURLY LEQ WEIGHTING	ADJUSTED HOURLY LEQ
0000	42.8		10.0	52.8
0100	40.4		10.0	50.4
0200	39.2		10.0	49.2
0300	37.4		10.0	47.4
0400	38.4		10.0	48.4
0500	42.2		10.0	52.2
0600	48.6		10.0	58.6
0700	50.9		0.0	50.9
0800	49.0		0.0	49.0
0900	48.0	*	0.0	48.0
1000	47.9		0.0	47.9
1100	48.1		0.0	48.1
1200	48.2		0.0	48.2
1300	48.3		0.0	48.3
1400	48.5		0.0	48.5
1500	49.7		0.0	49.7
1600	51.2		0.0	51.2
1700	50.9		0.0	50.9
1800	49.2		0.0	49.2
1900	47.8		5.0	52.8
2000	46.7		5.0	51.7
2100	46.0		5.0	51.0
2200	45.0		10.0	55.0
2300	44.4		10.0	54.4
CNEL (dBA)				51.6

HR. MEASURED: 900 *
MEASURED LEQ: 48.0 *

CNEL CALCULATED FROM SITE MEASUREMENTS

PROJECT: Behavioral Health Center DATE: 22-Jan-25

LOCATION: NM3 JN: 1293-2024-07

TIME BEGINNING	HOURLY LEQ		HOURLY LEQ WEIGHTING	ADJUSTED HOURLY LEQ
0000	60.8		10.0	70.8
0100	58.4		10.0	68.4
0200	57.2		10.0	67.2
0300	55.4		10.0	65.4
0400	56.4		10.0	66.4
0500	60.2		10.0	70.2
0600	66.6		10.0	76.6
0700	68.9		0.0	68.9
0800	67.0		0.0	67.0
0900	66.0	*	0.0	66.0
1000	65.9		0.0	65.9
1100	66.1		0.0	66.1
1200	66.2		0.0	66.2
1300	66.3		0.0	66.3
1400	66.5		0.0	66.5
1500	67.7		0.0	67.7
1600	69.2		0.0	69.2
1700	68.9		0.0	68.9
1800	67.2		0.0	67.2
1900	65.8		5.0	70.8
2000	64.7		5.0	69.7
2100	64.0		5.0	69.0
2200	63.0		10.0	73.0
2300	62.4		10.0	72.4
CNEL (dBA)				69.6

HR. MEASURED: 900 *

MEASURED LEQ: 66.0 *

CNEL CALCULATED FROM SITE MEASUREMENTS

PROJECT: Behavioral Health Center DATE: 22-Jan-25
LOCATION: Façade of HS JN: 1293-2024-07

TIME BEGINNING	HOURLY LEQ		HOURLY LEQ WEIGHTING	ADJUSTED HOURLY LEQ
0000	40.8		10.0	50.8
0100	38.4		10.0	48.4
0200	37.2		10.0	47.2
0300	35.4		10.0	45.4
0400	36.4		10.0	46.4
0500	40.2		10.0	50.2
0600	46.6		10.0	56.6
0700	48.9		0.0	48.9
0800	47.0		0.0	47.0
0900	46.0	*	0.0	46.0
1000	45.9		0.0	45.9
1100	46.1		0.0	46.1
1200	46.2		0.0	46.2
1300	46.3		0.0	46.3
1400	46.5		0.0	46.5
1500	47.7		0.0	47.7
1600	49.2		0.0	49.2
1700	48.9		0.0	48.9
1800	47.2		0.0	47.2
1900	45.8		5.0	50.8
2000	44.7		5.0	49.7
2100	44.0		5.0	49.0
2200	43.0		10.0	53.0
2300	42.4		10.0	52.4
CNEL (dBA)				49.6

HR. MEASURED: 900 *
MEASURED LEQ: 46.0 *

Appendix B:

SoundPLAN Noise Modeling Data

Behavioral Health Victorville Noise
Contribution spectra - 001 - Behavioral Health Victorville: Outdoor SP

Source	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
		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 R2	Fl G Lr,lim dB(A) Lr,lim dB(A) Leq,d 37.9 dB(A) Leq,n 37.9 dB(A)																														
	Leq,d	36.9					24.8			32.6			20.9			26.4			29.8			30.2			23.9			4.4			-42.6
	Leq,n	36.9					24.8			32.6			20.9			26.4			29.8			30.2			23.9			4.4			-42.6
HVAC	Leq,d	7.1	-39.6	-33.7	-29.9	-17.0	-12.3	-18.4	-11.5	-9.7	-11.0	-9.4	-9.5	-7.7	-6.8	-5.9	-2.2	0.2	-4.1	-2.6	-2.0	-5.1	-5.7	-11.3	-14.3	-22.6	-32.1	-51.5	-77.3		
HVAC	Leq,n	7.1	-39.6	-33.7	-29.9	-17.0	-12.3	-18.4	-11.5	-9.7	-11.0	-9.4	-9.5	-7.7	-6.8	-5.9	-2.2	0.2	-4.1	-2.6	-2.0	-5.1	-5.7	-11.3	-14.3	-22.6	-32.1	-51.5	-77.3		
HVAC	Leq,d	6.1	-39.7	-34.0	-30.4	-17.7	-13.1	-19.3	-12.0	-10.3	-11.6	-10.2	-10.3	-8.5	-7.7	-6.8	-3.1	-0.8	-5.1	-3.7	-3.1	-6.3	-7.2	-13.1	-16.5	-25.3	-35.7	-56.3	-83.9		
HVAC	Leq,n	6.1	-39.7	-34.0	-30.4	-17.7	-13.1	-19.3	-12.0	-10.3	-11.6	-10.2	-10.3	-8.5	-7.7	-6.8	-3.1	-0.8	-5.1	-3.7	-3.1	-6.3	-7.2	-13.1	-16.5	-25.3	-35.7	-56.3	-83.9		
HVAC	Leq,d	6.3	-42.2	-36.2	-32.2	-19.2	-14.3	-20.3	-13.0	-11.1	-12.2	-10.4	-10.4	-8.5	-7.6	-6.7	-2.9	-0.5	-4.8	-3.3	-2.6	-5.8	-6.5	-12.2	-15.4	-23.9	-33.9	-53.9	-80.8		
HVAC	Leq,n	6.3	-42.2	-36.2	-32.2	-19.2	-14.3	-20.3	-13.0	-11.1	-12.2	-10.4	-10.4	-8.5	-7.6	-6.7	-2.9	-0.5	-4.8	-3.3	-2.6	-5.8	-6.5	-12.2	-15.4	-23.9	-33.9	-53.9	-80.8		
HVAC	Leq,d	6.8	-39.8	-33.9	-30.0	-17.2	-12.4	-18.6	-11.6	-9.9	-11.1	-9.6	-9.8	-8.0	-7.1	-6.3	-2.5	-0.1	-4.5	-3.0	-2.4	-5.5	-6.2	-12.0	-15.2	-23.7	-33.6	-53.6	-80.3		
HVAC	Leq,n	6.8	-39.8	-33.9	-30.0	-17.2	-12.4	-18.6	-11.6	-9.9	-11.1	-9.6	-9.8	-8.0	-7.1	-6.3	-2.5	-0.1	-4.5	-3.0	-2.4	-5.5	-6.2	-12.0	-15.2	-23.7	-33.6	-53.6	-80.3		
HVAC	Leq,d	6.7	-39.8	-34.0	-30.2	-17.5	-12.8	-19.0	-12.0	-10.2	-11.4	-9.7	-9.8	-7.9	-7.1	-6.2	-2.4	-0.1	-4.5	-3.0	-2.4	-5.6	-6.3	-12.0	-15.2	-23.6	-33.3	-52.8	-78.9		
HVAC	Leq,n	6.7	-39.8	-34.0	-30.2	-17.5	-12.8	-19.0	-12.0	-10.2	-11.4	-9.7	-9.8	-7.9	-7.1	-6.2	-2.4	-0.1	-4.5	-3.0	-2.4	-5.6	-6.3	-12.0	-15.2	-23.6	-33.3	-52.8	-78.9		
HVAC	Leq,d	8.4	-37.7	-31.8	-27.9	-15.1	-10.2	-16.4	-8.9	-7.1	-8.4	-7.6	-7.7	-6.0	-4.9	-4.2	-0.6	1.6	-3.0	-1.7	-1.3	-4.7	-5.7	-11.6	-14.9	-23.3	-33.0	-52.2	-77.8		
HVAC	Leq,n	8.4	-37.7	-31.8	-27.9	-15.1	-10.2	-16.4	-8.9	-7.1	-8.4	-7.6	-7.7	-6.0	-4.9	-4.2	-0.6	1.6	-3.0	-1.7	-1.3	-4.7	-5.7	-11.6	-14.9	-23.3	-33.0	-52.2	-77.8		
HVAC	Leq,d	8.8	-37.0	-31.1	-27.3	-14.4	-9.6	-15.8	-8.5	-6.7	-8.0	-7.0	-7.2	-5.5	-4.4	-3.7	-0.2	2.1	-2.5	-1.2	-0.9	-4.2	-5.1	-10.9	-13.9	-21.9	-31.0	-49.3	-73.4		
HVAC	Leq,n	8.8	-37.0	-31.1	-27.3	-14.4	-9.6	-15.8	-8.5	-6.7	-8.0	-7.0	-7.2	-5.5	-4.4	-3.7	-0.2	2.1	-2.5	-1.2	-0.9	-4.2	-5.1	-10.9	-13.9	-21.9	-31.0	-49.3	-73.4		
HVAC	Leq,d	9.2	-37.4	-31.5	-27.6	-14.8	-9.9	-16.1	-8.7	-6.9	-8.1	-7.1	-7.2	-5.5	-4.2	-3.5	0.2	2.5	-2.0	-0.6	-0.3	-3.6	-4.5	-10.3	-13.5	-21.8	-31.2	-50.0	-74.9		
HVAC	Leq,n	9.2	-37.4	-31.5	-27.6	-14.8	-9.9	-16.1	-8.7	-6.9	-8.1	-7.1	-7.2	-5.5	-4.2	-3.5	0.2	2.5	-2.0	-0.6	-0.3	-3.6	-4.5	-10.3	-13.5	-21.8	-31.2	-50.0	-74.9		
HVAC	Leq,d	11.0	-41.3	-35.3	-31.3	-18.3	-13.3	-19.2	-11.6	-9.6	-10.7	-8.7	-8.5	-6.4	-5.2	-3.9	0.4	3.5	0.5	2.7	3.4	0.4	-0.1	-5.5	-8.2	-16.0	-24.8	-43.0	-67.3	-96.3	
HVAC	Leq,n	11.0	-41.3	-35.3	-31.3	-18.3	-13.3	-19.2	-11.6	-9.6	-10.7	-8.7	-8.5	-6.4	-5.2	-3.9	0.4	3.5	0.5	2.7	3.4	0.4	-0.1	-5.5	-8.2	-16.0	-24.8	-43.0	-67.3	-96.3	
HVAC	Leq,d	7.1	-42.9	-36.9	-32.9	-19.9	-14.9	-20.9	-14.1	-12.2	-13.2	-11.3	-11.2	-9.3	-8.3	-7.2	-3.2	-0.4	-4.3	-2.3	-1.0	-3.0	-3.4	-9.5	-13.3	-22.7	-34.1	-56.2	-86.0		
HVAC	Leq,n	7.1	-42.9	-36.9	-32.9	-19.9	-14.9	-20.9	-14.1	-12.2	-13.2	-11.3	-11.2	-9.3	-8.3	-7.2	-3.2	-0.4	-4.3	-2.3	-1.0	-3.0	-3.4	-9.5	-13.3	-22.7	-34.1	-56.2	-86.0		
HVAC	Leq,d	7.9	-40.0	-33.9	-30.0	-17.0	-12.0	-18.0	-11.1	-9.2	-10.4	-9.1	-9.2	-7.3	-6.0	-5.1	-1.3	1.4	-3.0	-1.6	-1.1	-4.4	-5.4	-11.6	-15.4	-24.9	-36.4	-58.5	-88.4		
HVAC	Leq,n	7.9	-40.0	-33.9	-30.0	-17.0	-12.0	-18.0	-11.1	-9.2	-10.4	-9.1	-9.2	-7.3	-6.0	-5.1	-1.3	1.4	-3.0	-1.6	-1.1	-4.4	-5.4	-11.6	-15.4	-24.9	-36.4	-58.5	-88.4		
HVAC	Leq,d	7.8	-42.7	-36.7	-32.7	-19.7	-14.7	-20.7	-13.6	-11.6	-12.7	-10.8	-10.7	-8.7	-7.7	-6.6	-2.6	0.2	-3.6	-1.5	0.1	-1.9	-2.7	-8.7	-12.2	-21.3	-32.1	-53.4	-82.0		
HVAC	Leq,n	7.8	-42.7	-36.7	-32.7	-19.7	-14.7	-20.7	-13.6	-11.6	-12.7	-10.8	-10.7	-8.7	-7.7	-6.6	-2.6	0.2	-3.6	-1.5	0.1	-1.9	-2.7	-8.7	-12.2	-21.3	-32.1	-53.4	-82.0		
HVAC	Leq,d	6.4	-40.2	-34.4	-30.7	-17.9	-13.2	-19.4	-12.2	-10.4	-11.7	-10.1	-10.1	-8.3	-7.4	-6.6	-2.8	-0.5	-4.8	-3.3	-2.8	-6.0	-6.8	-12.6	-15.9	-24.5	-34.6	-54.6	-81.5		
HVAC	Leq,n	6.4	-40.2	-34.4	-30.7	-17.9	-13.2	-19.4	-12.2	-10.4	-11.7	-10.1	-10.1	-8.3	-7.4	-6.6	-2.8	-0.5	-4.8	-3.3	-2.8	-6.0	-6.8	-12.6	-15.9	-24.5	-34.6	-54.6	-81.5		
HVAC	Leq,d	6.8	-43.2	-37.1	-33.1	-20.1	-15.2	-21.2	-14.4	-12.4	-13.5	-11.5	-11.5	-9.5	-8.5	-7.5	-3.5	-0.6	-4.6	-2.6	-1.3	-3.3	-3.8	-10.0	-13.9	-23.6	-35.3	-57.9	-88.6		
HVAC	Leq,n	6.8	-43.2	-37.1	-33.1	-20.1	-15.2	-21.2	-14.4	-12.4	-13.5	-11.5	-11.5	-9.5	-8.5	-7.5	-3.5	-0.6	-4.6	-2.6	-1.3	-3.3	-3.8	-10.0	-13.9	-23.6	-35.3	-57.9	-88.6		
HVAC	Leq,d	5.7	-40.4	-34.5	-30.6	-17.7	-12.9	-19.0	-11.9	-10.1	-11.4	-10.3	-10.5	-8.8	-7.8	-7.1	-3.4	-1.0	-5.5	-4.2	-3.7	-7.1	-8.1	-14.3	-18.1	-27.6	-39.0	-60.9	-90.6		
HVAC	Leq,n	5.7	-40.4	-34.5	-30.6	-17.7	-12.9	-19.0	-11.9	-10.1	-11.4	-10.3	-10.5	-8.8	-7.8	-7.1	-3.4	-1.0	-5.5	-4.2	-3.7	-7.1	-8.1	-14.3	-18.1	-27.6	-39.0	-60.9	-90.6		
HVAC	Leq,d	7.0	-39.9	-33.9	-29.9	-16.9	-12.0	-18.1	-10.9	-9.1	-10.3	-9.2	-9.3	-7.6	-6.4	-5.7	-2.0	0.4	-4.1	-2.8	-2.5	-5.9	-7.0	-13.2	-17.0	-26.4	-37.6	-59.2	-88.4		
HVAC	Leq,n	7.0	-39.9	-33.9	-29.9	-16.9	-12.0	-18.1	-10.9	-9.1	-10.3	-9.2	-9.3	-7.6	-6.4	-5.7	-2.0	0.4	-4.1	-2.8	-2.5	-5.9	-7.0	-13.2	-17.0	-26.4	-37.6	-59.2	-88.4		
HVAC	Leq,d	6.0	-40.3	-34.3	-30.4	-17.4	-12.5	-18.6	-11.8	-10.0	-11.2	-10.0	-10.2	-8.4	-7.4	-6.7	-3.1	-0.6	-5.2	-3.9	-3.5	-7.0	-8.1	-14.5	-18.5	-28.3	-40.1	-62.7	-93.3		

Behavioral Health Victorville Noise
Contribution spectra - 001 - Behavioral Health Victorville: Outdoor SP

Source	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
		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)
HVAC	Leq,n	6.0	-40.3	-34.3	-30.4	-17.4	-12.5	-18.6	-11.8	-10.0	-11.2	-10.0	-10.2	-8.4	-7.4	-6.7	-3.1	-0.6	-5.2	-3.9	-3.5	-7.0	-8.1	-14.5	-18.5	-28.3	-40.1	-62.7	-93.3		
HVAC	Leq,d	7.6	-42.7	-36.7	-32.7	-19.7	-14.7	-20.7	-13.8	-11.8	-12.9	-10.9	-10.9	-8.9	-7.9	-6.8	-2.8	0.0	-3.9	-1.8	-0.4	-2.2	-2.9	-8.9	-12.5	-21.6	-32.6	-54.1	-83.0		
HVAC	Leq,n	7.6	-42.7	-36.7	-32.7	-19.7	-14.7	-20.7	-13.8	-11.8	-12.9	-10.9	-10.9	-8.9	-7.9	-6.8	-2.8	0.0	-3.9	-1.8	-0.4	-2.2	-2.9	-8.9	-12.5	-21.6	-32.6	-54.1	-83.0		
HVAC	Leq,d	7.7	-37.9	-32.1	-28.3	-15.6	-10.8	-17.1	-9.8	-8.1	-9.5	-8.2	-8.4	-6.6	-5.8	-5.0	-1.4	0.8	-3.7	-2.4	-1.9	-5.2	-6.0	-11.7	-14.7	-22.8	-31.9	-50.3	-74.7		
HVAC	Leq,n	7.7	-37.9	-32.1	-28.3	-15.6	-10.8	-17.1	-9.8	-8.1	-9.5	-8.2	-8.4	-6.6	-5.8	-5.0	-1.4	0.8	-3.7	-2.4	-1.9	-5.2	-6.0	-11.7	-14.7	-22.8	-31.9	-50.3	-74.7		
HVAC	Leq,d	18.2	-36.0	-29.9	-25.8	-12.6	-7.4	-13.1	-4.5	-2.0	-2.3	-0.7	-0.7	1.3	3.3	4.3	8.1	11.1	7.0	8.8	9.7	7.2	7.4	3.2	2.2	-2.8	-7.5	-19.4	-34.6	-50.8	-73.6
HVAC	Leq,n	18.2	-36.0	-29.9	-25.8	-12.6	-7.4	-13.1	-4.5	-2.0	-2.3	-0.7	-0.7	1.3	3.3	4.3	8.1	11.1	7.0	8.8	9.7	7.2	7.4	3.2	2.2	-2.8	-7.5	-19.4	-34.6	-50.8	-73.6
HVAC	Leq,d	21.3	-33.1	-26.8	-22.6	-9.3	-3.9	-9.2	0.2	3.4	2.3	2.2	2.2	4.1	6.1	7.1	11.0	13.9	9.8	11.6	12.7	10.3	10.8	6.8	6.4	2.2	-1.3	-11.4	-23.9	-36.4	-54.3
HVAC	Leq,n	21.3	-33.1	-26.8	-22.6	-9.3	-3.9	-9.2	0.2	3.4	2.3	2.2	2.2	4.1	6.1	7.1	11.0	13.9	9.8	11.6	12.7	10.3	10.8	6.8	6.4	2.2	-1.3	-11.4	-23.9	-36.4	-54.3
HVAC	Leq,d	19.3	-34.4	-28.4	-24.4	-11.4	-6.4	-12.3	-3.9	-1.9	-2.8	-1.2	-1.0	1.1	2.3	3.6	7.9	10.6	7.3	10.6	11.8	9.4	9.8	5.7	5.2	0.8	-3.0	-13.6	-26.8	-40.2	-59.5
HVAC	Leq,n	19.3	-34.4	-28.4	-24.4	-11.4	-6.4	-12.3	-3.9	-1.9	-2.8	-1.2	-1.0	1.1	2.3	3.6	7.9	10.6	7.3	10.6	11.8	9.4	9.8	5.7	5.2	0.8	-3.0	-13.6	-26.8	-40.2	-59.5
HVAC	Leq,d	21.9	-32.9	-26.8	-22.7	-9.6	-4.5	-10.4	-1.6	0.6	-0.1	2.0	2.8	4.8	6.8	7.8	11.7	14.6	10.4	12.3	13.4	11.0	11.5	7.6	7.3	3.2	0.0	-9.8	-21.8	-33.5	-50.5
HVAC	Leq,n	21.9	-32.9	-26.8	-22.7	-9.6	-4.5	-10.4	-1.6	0.6	-0.1	2.0	2.8	4.8	6.8	7.8	11.7	14.6	10.4	12.3	13.4	11.0	11.5	7.6	7.3	3.2	0.0	-9.8	-21.8	-33.5	-50.5
HVAC	Leq,d	16.7	-36.6	-30.6	-26.6	-13.6	-8.6	-14.6	-6.2	-4.2	-5.2	-3.4	-3.3	-1.2	0.0	1.3	5.5	8.2	4.9	8.0	9.4	6.8	7.0	2.7	1.7	-3.5	-8.3	-20.6	-36.1	-52.8	-76.4
HVAC	Leq,n	16.7	-36.6	-30.6	-26.6	-13.6	-8.6	-14.6	-6.2	-4.2	-5.2	-3.4	-3.3	-1.2	0.0	1.3	5.5	8.2	4.9	8.0	9.4	6.8	7.0	2.7	1.7	-3.5	-8.3	-20.6	-36.1	-52.8	-76.4
HVAC	Leq,d	18.3	-36.0	-29.9	-25.8	-12.7	-7.6	-13.4	-4.8	-2.5	-3.1	-0.6	-0.6	1.4	3.4	4.3	8.2	11.2	7.1	8.9	9.8	7.3	7.6	3.3	2.4	-2.6	-7.2	-19.1	-34.2	-50.2	-72.9
HVAC	Leq,n	18.3	-36.0	-29.9	-25.8	-12.7	-7.6	-13.4	-4.8	-2.5	-3.1	-0.6	-0.6	1.4	3.4	4.3	8.2	11.2	7.1	8.9	9.8	7.3	7.6	3.3	2.4	-2.6	-7.2	-19.1	-34.2	-50.2	-72.9
HVAC	Leq,d	12.5	-37.7	-31.6	-27.7	-14.7	-9.7	-15.7	-7.5	-5.5	-6.6	-4.8	-4.8	-2.9	-1.9	-1.0	2.9	5.1	0.9	2.7	3.7	1.2	1.4	-3.0	-4.1	-9.4	-14.6	-27.3	-43.7	-61.4	-86.3
HVAC	Leq,n	12.5	-37.7	-31.6	-27.7	-14.7	-9.7	-15.7	-7.5	-5.5	-6.6	-4.8	-4.8	-2.9	-1.9	-1.0	2.9	5.1	0.9	2.7	3.7	1.2	1.4	-3.0	-4.1	-9.4	-14.6	-27.3	-43.7	-61.4	-86.3
HVAC	Leq,d	16.5	-37.6	-31.6	-27.5	-14.5	-9.5	-15.4	-7.1	-5.0	-5.9	-3.9	-3.6	-1.2	0.4	2.3	6.7	9.6	5.5	7.2	8.2	5.5	5.6	1.1	-0.2	-5.7	-11.2	-24.3	-41.3	-59.9	-86.0
HVAC	Leq,n	16.5	-37.6	-31.6	-27.5	-14.5	-9.5	-15.4	-7.1	-5.0	-5.9	-3.9	-3.6	-1.2	0.4	2.3	6.7	9.6	5.5	7.2	8.2	5.5	5.6	1.1	-0.2	-5.7	-11.2	-24.3	-41.3	-59.9	-86.0
HVAC	Leq,d	17.1	-37.0	-30.8	-26.7	-13.5	-8.3	-14.0	-5.3	-2.7	-2.7	-1.7	-1.7	0.2	2.2	3.2	7.1	10.0	5.9	7.6	8.6	6.0	6.1	1.7	0.5	-4.9	-10.1	-23.0	-39.4	-57.3	-82.5
HVAC	Leq,n	17.1	-37.0	-30.8	-26.7	-13.5	-8.3	-14.0	-5.3	-2.7	-2.7	-1.7	-1.7	0.2	2.2	3.2	7.1	10.0	5.9	7.6	8.6	6.0	6.1	1.7	0.5	-4.9	-10.1	-23.0	-39.4	-57.3	-82.5
HVAC	Leq,d	12.3	-34.2	-28.3	-24.5	-11.8	-7.1	-13.4	-5.6	-4.0	-5.4	-4.3	-4.5	-2.7	-1.8	-0.9	2.9	5.0	0.7	2.4	3.2	0.6	0.6	-4.0	-5.4	-11.1	-16.8	-30.3	-47.6	-66.8	-93.7
HVAC	Leq,n	12.3	-34.2	-28.3	-24.5	-11.8	-7.1	-13.4	-5.6	-4.0	-5.4	-4.3	-4.5	-2.7	-1.8	-0.9	2.9	5.0	0.7	2.4	3.2	0.6	0.6	-4.0	-5.4	-11.1	-16.8	-30.3	-47.6	-66.8	-93.7
HVAC	Leq,d	14.7	-34.8	-28.8	-24.8	-11.8	-6.9	-12.9	-4.7	-2.8	-3.9	-3.0	-3.0	-1.0	0.3	1.3	5.1	7.6	3.4	5.1	5.9	3.2	3.2	-1.4	-2.9	-8.6	-14.3	-27.8	-45.0	-64.0	-90.6
HVAC	Leq,n	14.7	-34.8	-28.8	-24.8	-11.8	-6.9	-12.9	-4.7	-2.8	-3.9	-3.0	-3.0	-1.0	0.3	1.3	5.1	7.6	3.4	5.1	5.9	3.2	3.2	-1.4	-2.9	-8.6	-14.3	-27.8	-45.0	-64.0	-90.6
HVAC	Leq,d	16.3	-37.7	-31.6	-27.5	-14.4	-9.2	-15.0	-6.4	-4.1	-4.6	-2.4	-2.4	-0.4	1.6	2.5	6.4	9.4	5.2	7.0	7.9	5.3	5.3	0.8	-0.6	-6.2	-11.8	-25.2	-42.4	-61.5	-88.2
HVAC	Leq,n	16.3	-37.7	-31.6	-27.5	-14.4	-9.2	-15.0	-6.4	-4.1	-4.6	-2.4	-2.4	-0.4	1.6	2.5	6.4	9.4	5.2	7.0	7.9	5.3	5.3	0.8	-0.6	-6.2	-11.8	-25.2	-42.4	-61.5	-88.2
HVAC	Leq,d	7.2	-38.5	-32.6	-28.8	-16.1	-11.3	-17.5	-10.0	-8.3	-9.7	-8.6	-8.8	-7.1	-6.2	-5.5	-1.9	0.3	-4.2	-2.9	-2.4	-5.7	-6.6	-12.4	-15.7	-24.1	-33.9	-53.2	-79.0		
HVAC	Leq,n	7.2	-38.5	-32.6	-28.8	-16.1	-11.3	-17.5	-10.0	-8.3	-9.7	-8.6	-8.8	-7.1	-6.2	-5.5	-1.9	0.3	-4.2	-2.9	-2.4	-5.7	-6.6	-12.4	-15.7	-24.1	-33.9	-53.2	-79.0		
HVAC	Leq,d	16.1	-37.9	-31.8	-27.7	-14.6	-9.5	-15.2	-6.7	-4.3	-4.8	-2.6	-2.6	-0.7	1.4	2.3	6.2	9.2	5.0	6.7	7.7	5.0	5.1	0.5	-0.9	-6.6	-12.4	-26.0	-43.5	-63.0	-90.2
HVAC	Leq,n	16.1	-37.9	-31.8	-27.7	-14.6	-9.5	-15.2	-6.7	-4.3	-4.8	-2.6	-2.6	-0.7	1.4	2.3	6.2	9.2	5.0	6.7	7.7	5.0	5.1	0.5	-0.9	-6.6	-12.4	-26.0	-43.5	-63.0	-90.2
HVAC	Leq,d	21.8	-32.9	-26.8	-22.8	-9.7	-4.6	-10.4	-1.7	0.5	-0.2	1.9	2.8	4.8	6.7	7.7	11.6	14.5	10.4	12.2	13.3	10.9	11.4	7.5	7.2	3.1	-0.1	-9.9	-22.0	-33.8	-50.8
HVAC	Leq,n	21.8	-32.9	-26.8	-22.8	-9.7	-4.6	-10.4	-1.7	0.5	-0.2	1.9	2.8	4.8	6.7	7.7	11.6	14.5	10.4	12.2	13.3	10.9	11.4	7.5	7.2	3.1	-0.1	-9.9	-22.0	-33.8	-50.8
HVAC	Leq,d	18.7	-35.7	-29.6	-25.5	-12.4	-7.2	-13.0	-4.3	-1.9	-2.3	-0.3	-0.3	1.6	3.6	4.6	8.5	11.5	7.3	9.1	10.3	7.8	8.0	3.7	2.8	-2.1	-6.6	-18.3	-33.1	-48.8	-70.9

Source	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
		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)
HVAC	Leq,n	18.7	-35.7	-29.6	-25.5	-12.4	-7.2	-13.0	-4.3	-1.9	-2.3	-0.3	-0.3	1.6	3.6	4.6	8.5	11.5	7.3	9.1	10.3	7.8	8.0	3.7	2.8	-2.1	-6.6	-18.3	-33.1	-48.8	-70.9
HVAC	Leq,d	18.3	-36.1	-30.0	-25.9	-12.9	-7.8	-13.6	-5.1	-2.9	-3.6	-1.4	-0.6	1.3	3.3	4.3	8.2	11.2	7.0	8.8	9.8	7.5	7.7	3.4	2.4	-2.6	-7.3	-19.2	-34.3	-50.4	-73.1
HVAC	Leq,n	18.3	-36.1	-30.0	-25.9	-12.9	-7.8	-13.6	-5.1	-2.9	-3.6	-1.4	-0.6	1.3	3.3	4.3	8.2	11.2	7.0	8.8	9.8	7.5	7.7	3.4	2.4	-2.6	-7.3	-19.2	-34.3	-50.4	-73.1
HVAC	Leq,d	14.9	-35.4	-29.4	-25.4	-12.4	-7.4	-13.4	-5.0	-3.1	-4.2	-2.5	-2.5	-0.6	0.4	1.3	5.3	7.4	3.3	5.1	6.1	3.7	4.0	-0.1	-0.8	-5.5	-9.6	-20.8	-34.8	-49.4	-70.1
HVAC	Leq,n	14.9	-35.4	-29.4	-25.4	-12.4	-7.4	-13.4	-5.0	-3.1	-4.2	-2.5	-2.5	-0.6	0.4	1.3	5.3	7.4	3.3	5.1	6.1	3.7	4.0	-0.1	-0.8	-5.5	-9.6	-20.8	-34.8	-49.4	-70.1
Receiver R3	Fl G	Lr,lim dB(A)	Lr,lim dB(A)	Leq,d 41.4 dB(A)	Leq,n 41.4 dB(A)																										
	Leq,d	41.0					26.3			34.8			25.6			31.3			34.6			35.2			30.6			19.1			-6.9
	Leq,n	41.0					26.3			34.8			25.6			31.3			34.6			35.2			30.6			19.1			-6.9
HVAC	Leq,d	13.5	-40.0	-33.9	-29.8	-16.6	-11.5	-17.3	-9.2	-6.9	-7.4	-4.9	-4.9	-3.0	-1.0	0.0	3.8	6.8	2.6	4.2	5.0	2.2	1.9	-3.1	-5.3	-12.1	-19.6	-35.8	-57.2	-82.0	
HVAC	Leq,n	13.5	-40.0	-33.9	-29.8	-16.6	-11.5	-17.3	-9.2	-6.9	-7.4	-4.9	-4.9	-3.0	-1.0	0.0	3.8	6.8	2.6	4.2	5.0	2.2	1.9	-3.1	-5.3	-12.1	-19.6	-35.8	-57.2	-82.0	
HVAC	Leq,d	12.7	-40.7	-34.7	-30.7	-17.6	-12.6	-18.6	-10.3	-8.3	-9.2	-7.3	-7.1	-4.8	-3.4	-1.9	3.0	6.3	2.0	3.7	4.5	1.6	1.3	-3.9	-6.1	-13.2	-21.0	-37.7	-59.8	-85.6	
HVAC	Leq,n	12.7	-40.7	-34.7	-30.7	-17.6	-12.6	-18.6	-10.3	-8.3	-9.2	-7.3	-7.1	-4.8	-3.4	-1.9	3.0	6.3	2.0	3.7	4.5	1.6	1.3	-3.9	-6.1	-13.2	-21.0	-37.7	-59.8	-85.6	
HVAC	Leq,d	12.5	-40.5	-34.5	-30.5	-17.4	-12.4	-18.4	-10.4	-8.4	-9.4	-7.4	-7.2	-5.1	-3.8	-2.5	2.0	5.0	2.2	3.9	4.7	1.8	1.5	-3.6	-5.8	-12.8	-20.5	-37.0	-58.8	-84.2	
HVAC	Leq,n	12.5	-40.5	-34.5	-30.5	-17.4	-12.4	-18.4	-10.4	-8.4	-9.4	-7.4	-7.2	-5.1	-3.8	-2.5	2.0	5.0	2.2	3.9	4.7	1.8	1.5	-3.6	-5.8	-12.8	-20.5	-37.0	-58.8	-84.2	
HVAC	Leq,d	12.9	-40.5	-34.4	-30.4	-17.3	-12.3	-18.2	-10.4	-8.3	-9.2	-6.9	-6.6	-4.1	-2.4	-0.4	3.4	6.4	2.1	3.8	4.6	1.7	1.3	-3.8	-6.1	-13.2	-21.0	-37.8	-59.9	-85.8	
HVAC	Leq,n	12.9	-40.5	-34.4	-30.4	-17.3	-12.3	-18.2	-10.4	-8.3	-9.2	-6.9	-6.6	-4.1	-2.4	-0.4	3.4	6.4	2.1	3.8	4.6	1.7	1.3	-3.8	-6.1	-13.2	-21.0	-37.8	-59.9	-85.8	
HVAC	Leq,d	14.0	-39.8	-33.7	-29.7	-16.6	-11.6	-17.4	-9.3	-7.2	-8.0	-5.6	-5.1	-2.5	-0.5	0.4	4.3	7.3	3.0	4.7	5.6	2.8	2.6	-2.3	-4.3	-10.8	-17.9	-33.4	-53.8	-77.2	
HVAC	Leq,n	14.0	-39.8	-33.7	-29.7	-16.6	-11.6	-17.4	-9.3	-7.2	-8.0	-5.6	-5.1	-2.5	-0.5	0.4	4.3	7.3	3.0	4.7	5.6	2.8	2.6	-2.3	-4.3	-10.8	-17.9	-33.4	-53.8	-77.2	
HVAC	Leq,d	15.1	-38.1	-32.1	-28.1	-15.1	-10.1	-16.0	-7.7	-5.7	-6.7	-4.9	-4.8	-2.7	-1.5	-0.2	4.1	6.8	3.4	6.7	7.6	5.0	5.0	0.5	-0.9	-6.7	-12.4	-26.0	-43.5	-63.0	-90.3
HVAC	Leq,n	15.1	-38.1	-32.1	-28.1	-15.1	-10.1	-16.0	-7.7	-5.7	-6.7	-4.9	-4.8	-2.7	-1.5	-0.2	4.1	6.8	3.4	6.7	7.6	5.0	5.0	0.5	-0.9	-6.7	-12.4	-26.0	-43.5	-63.0	-90.3
HVAC	Leq,d	17.1	-37.1	-31.0	-27.0	-13.9	-8.8	-14.7	-6.4	-4.2	-5.0	-2.6	-1.9	0.2	2.3	3.2	7.1	10.1	5.9	7.7	8.6	6.1	6.2	1.8	0.6	-4.8	-10.0	-22.8	-39.2	-57.0	-82.1
HVAC	Leq,n	17.1	-37.1	-31.0	-27.0	-13.9	-8.8	-14.7	-6.4	-4.2	-5.0	-2.6	-1.9	0.2	2.3	3.2	7.1	10.1	5.9	7.7	8.6	6.1	6.2	1.8	0.6	-4.8	-10.0	-22.8	-39.2	-57.0	-82.1
HVAC	Leq,d	16.4	-37.8	-31.7	-27.7	-14.6	-9.6	-15.5	-7.1	-5.0	-5.9	-3.8	-3.4	-0.9	0.9	2.6	6.5	9.5	5.3	7.1	8.0	5.4	5.4	0.9	-0.4	-6.0	-11.6	-24.9	-42.0	-60.9	-87.4
HVAC	Leq,n	16.4	-37.8	-31.7	-27.7	-14.6	-9.6	-15.5	-7.1	-5.0	-5.9	-3.8	-3.4	-0.9	0.9	2.6	6.5	9.5	5.3	7.1	8.0	5.4	5.4	0.9	-0.4	-6.0	-11.6	-24.9	-42.0	-60.9	-87.4
HVAC	Leq,d	15.4	-38.1	-32.0	-28.0	-15.0	-10.0	-16.0	-7.7	-5.7	-6.7	-4.8	-4.6	-2.4	-1.2	0.2	4.6	7.6	4.9	6.8	7.7	5.0	5.1	0.5	-0.9	-6.6	-12.3	-25.9	-43.4	-62.8	-90.1
HVAC	Leq,n	15.4	-38.1	-32.0	-28.0	-15.0	-10.0	-16.0	-7.7	-5.7	-6.7	-4.8	-4.6	-2.4	-1.2	0.2	4.6	7.6	4.9	6.8	7.7	5.0	5.1	0.5	-0.9	-6.6	-12.3	-25.9	-43.4	-62.8	-90.1
HVAC	Leq,d	8.5	-40.6	-34.6	-30.6	-17.6	-12.7	-18.7	-11.1	-9.2	-10.3	-8.3	-8.4	-6.5	-5.5	-4.6	-0.8	1.5	-2.8	-1.1	-0.3	-3.2	-3.6	-8.8	-11.1	-18.3	-26.3	-43.3	-65.7	-92.1	
HVAC	Leq,n	8.5	-40.6	-34.6	-30.6	-17.6	-12.7	-18.7	-11.1	-9.2	-10.3	-8.3	-8.4	-6.5	-5.5	-4.6	-0.8	1.5	-2.8	-1.1	-0.3	-3.2	-3.6	-8.8	-11.1	-18.3	-26.3	-43.3	-65.7	-92.1	
HVAC	Leq,d	8.4	-40.8	-34.8	-30.8	-17.8	-12.9	-18.9	-11.2	-9.3	-10.4	-8.4	-8.5	-6.6	-5.6	-4.7	-0.9	1.4	-2.9	-1.3	-0.5	-3.4	-3.8	-9.0	-11.4	-18.6	-26.7	-43.8	-66.5	-93.1	
HVAC	Leq,n	8.4	-40.8	-34.8	-30.8	-17.8	-12.9	-18.9	-11.2	-9.3	-10.4	-8.4	-8.5	-6.6	-5.6	-4.7	-0.9	1.4	-2.9	-1.3	-0.5	-3.4	-3.8	-9.0	-11.4	-18.6	-26.7	-43.8	-66.5	-93.1	
HVAC	Leq,d	8.9	-40.5	-34.5	-30.5	-17.5	-12.6	-18.6	-10.7	-8.7	-9.8	-7.9	-7.9	-6.0	-5.1	-4.2	-0.3	1.8	-2.5	-0.8	0.0	-2.9	-3.1	-8.2	-10.4	-17.4	-25.0	-41.5	-63.1	-88.4	
HVAC	Leq,n	8.9	-40.5	-34.5	-30.5	-17.5	-12.6	-18.6	-10.7	-8.7	-9.8	-7.9	-7.9	-6.0	-5.1	-4.2	-0.3	1.8	-2.5	-0.8	0.0	-2.9	-3.1	-8.2	-10.4	-17.4	-25.0	-41.5	-63.1	-88.4	
HVAC	Leq,d	13.5	-40.2	-34.1	-30.1	-17.0	-12.0	-17.9	-9.6	-7.5	-8.4	-6.1	-5.6	-3.0	-1.0	0.0	3.9	6.8	2.6	4.3	5.1	2.2	2.0	-3.0	-5.1	-11.9	-19.3	-35.3	-56.4	-80.8	
HVAC	Leq,n	13.5	-40.2	-34.1	-30.1	-17.0	-12.0	-17.9	-9.6	-7.5	-8.4	-6.1	-5.6	-3.0	-1.0	0.0	3.9	6.8	2.6	4.3	5.1	2.2	2.0	-3.0	-5.1	-11.9	-19.3	-35.3	-56.4	-80.8	
HVAC	Leq,d	8.1	-41.0	-34.9	-31.0	-18.0	-13.0	-19.0	-11.6	-9.6	-10.7	-8.8	-8.8	-6.9	-6.0	-5.1	-1.2	1.1	-3.2	-1.6	-0.8	-3.8	-4.2	-9.5	-12.0	-19.5	-27.9	-45.5	-68.8	-96.4	
HVAC	Leq,n	8.1	-41.0	-34.9	-31.0	-18.0	-13.0	-19.0	-11.6	-9.6	-10.7	-8.8	-8.8	-6.9	-6.0	-5.1	-1.2	1.1	-3.2	-1.6	-0.8	-3.8	-4.2	-9.5	-12.0	-19.5	-27.9	-45.5	-68.8	-96.4	

Behavioral Health Victorville Noise
Contribution spectra - 001 - Behavioral Health Victorville: Outdoor SP

Source	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
		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)
HVAC	Leq,d	8.1	-41.2	-35.1	-31.2	-18.2	-13.2	-19.2	-11.2	-9.3	-10.4	-8.7	-8.7	-6.8	-5.9	-4.9	-1.1	1.1	-3.2	-1.6	-0.8	-3.8	-4.2	-9.4	-11.9	-19.3	-27.6	-45.0	-68.0	-95.2	
HVAC	Leq,n	8.1	-41.2	-35.1	-31.2	-18.2	-13.2	-19.2	-11.2	-9.3	-10.4	-8.7	-8.7	-6.8	-5.9	-4.9	-1.1	1.1	-3.2	-1.6	-0.8	-3.8	-4.2	-9.4	-11.9	-19.3	-27.6	-45.0	-68.0	-95.2	
HVAC	Leq,d	8.6	-40.7	-34.7	-30.7	-17.7	-12.8	-18.8	-10.8	-8.9	-10.0	-8.2	-8.2	-6.3	-5.4	-4.5	-0.6	1.5	-2.7	-1.1	-0.3	-3.2	-3.5	-8.6	-10.9	-18.0	-25.9	-42.7	-64.8	-90.7	
HVAC	Leq,n	8.6	-40.7	-34.7	-30.7	-17.7	-12.8	-18.8	-10.8	-8.9	-10.0	-8.2	-8.2	-6.3	-5.4	-4.5	-0.6	1.5	-2.7	-1.1	-0.3	-3.2	-3.5	-8.6	-10.9	-18.0	-25.9	-42.7	-64.8	-90.7	
HVAC	Leq,d	7.9	-41.2	-35.1	-31.2	-18.2	-13.2	-19.2	-11.6	-9.7	-10.8	-8.9	-8.9	-7.0	-6.1	-5.2	-1.4	0.9	-3.4	-1.8	-1.0	-4.0	-4.4	-9.8	-12.3	-19.9	-28.4	-46.2	-69.7	-97.7	
HVAC	Leq,n	7.9	-41.2	-35.1	-31.2	-18.2	-13.2	-19.2	-11.6	-9.7	-10.8	-8.9	-8.9	-7.0	-6.1	-5.2	-1.4	0.9	-3.4	-1.8	-1.0	-4.0	-4.4	-9.8	-12.3	-19.9	-28.4	-46.2	-69.7	-97.7	
HVAC	Leq,d	8.9	-40.5	-34.4	-30.4	-17.4	-12.5	-18.5	-10.7	-8.8	-9.9	-7.9	-7.9	-6.0	-5.1	-4.2	-0.3	1.8	-2.4	-0.8	0.0	-2.8	-3.1	-8.2	-10.4	-17.4	-25.0	-41.4	-63.1	-88.4	
HVAC	Leq,n	8.9	-40.5	-34.4	-30.4	-17.4	-12.5	-18.5	-10.7	-8.8	-9.9	-7.9	-7.9	-6.0	-5.1	-4.2	-0.3	1.8	-2.4	-0.8	0.0	-2.8	-3.1	-8.2	-10.4	-17.4	-25.0	-41.4	-63.1	-88.4	
HVAC	Leq,d	17.4	-36.9	-30.8	-26.7	-13.6	-8.6	-14.4	-6.0	-3.9	-4.6	-2.3	-1.6	0.5	2.6	3.5	7.4	10.4	6.2	8.0	9.0	6.4	6.6	2.2	1.1	-4.2	-9.2	-21.8	-37.8	-55.1	-79.5
HVAC	Leq,n	17.4	-36.9	-30.8	-26.7	-13.6	-8.6	-14.4	-6.0	-3.9	-4.6	-2.3	-1.6	0.5	2.6	3.5	7.4	10.4	6.2	8.0	9.0	6.4	6.6	2.2	1.1	-4.2	-9.2	-21.8	-37.8	-55.1	-79.5
HVAC	Leq,d	11.9	-34.3	-28.5	-24.8	-12.0	-7.4	-13.7	-5.8	-4.2	-5.5	-4.3	-4.5	-2.7	-1.8	-1.0	2.7	4.7	0.3	1.8	2.5	-0.4	-0.6	-5.5	-7.2	-13.1	-19.1	-32.8	-50.2	-69.3	-95.9
HVAC	Leq,n	11.9	-34.3	-28.5	-24.8	-12.0	-7.4	-13.7	-5.8	-4.2	-5.5	-4.3	-4.5	-2.7	-1.8	-1.0	2.7	4.7	0.3	1.8	2.5	-0.4	-0.6	-5.5	-7.2	-13.1	-19.1	-32.8	-50.2	-69.3	-95.9
HVAC	Leq,d	19.0	-35.4	-29.3	-25.2	-12.1	-7.0	-12.8	-4.1	-1.8	-2.4	0.1	0.1	2.0	4.0	5.0	8.9	11.9	7.7	9.5	10.5	8.0	8.3	4.1	3.4	-1.4	-5.7	-17.2	-31.5	-46.6	-68.0
HVAC	Leq,n	19.0	-35.4	-29.3	-25.2	-12.1	-7.0	-12.8	-4.1	-1.8	-2.4	0.1	0.1	2.0	4.0	5.0	8.9	11.9	7.7	9.5	10.5	8.0	8.3	4.1	3.4	-1.4	-5.7	-17.2	-31.5	-46.6	-68.0
HVAC	Leq,d	19.1	-35.3	-29.1	-25.0	-11.9	-6.8	-12.6	-3.8	-1.5	-2.0	0.2	0.2	2.2	4.2	5.1	9.0	12.0	7.8	9.7	10.7	8.2	8.5	4.3	3.6	-1.2	-5.4	-16.8	-31.0	-45.9	-67.1
HVAC	Leq,n	19.1	-35.3	-29.1	-25.0	-11.9	-6.8	-12.6	-3.8	-1.5	-2.0	0.2	0.2	2.2	4.2	5.1	9.0	12.0	7.8	9.7	10.7	8.2	8.5	4.3	3.6	-1.2	-5.4	-16.8	-31.0	-45.9	-67.1
HVAC	Leq,d	19.8	-34.7	-28.6	-24.6	-11.6	-6.5	-12.5	-3.9	-1.9	-2.8	-1.1	-0.8	1.4	2.8	4.4	9.2	12.8	8.7	10.5	11.6	9.1	9.5	5.4	4.8	0.3	-3.6	-14.4	-27.8	-41.6	-61.2
HVAC	Leq,n	19.8	-34.7	-28.6	-24.6	-11.6	-6.5	-12.5	-3.9	-1.9	-2.8	-1.1	-0.8	1.4	2.8	4.4	9.2	12.8	8.7	10.5	11.6	9.1	9.5	5.4	4.8	0.3	-3.6	-14.4	-27.8	-41.6	-61.2
HVAC	Leq,d	11.4	-34.7	-28.9	-25.2	-12.5	-7.8	-14.1	-6.2	-4.6	-5.9	-4.7	-4.9	-3.1	-2.2	-1.4	2.3	4.3	-0.1	1.4	2.1	-0.9	-1.1	-6.1	-7.8	-14.0	-20.2	-34.3	-52.4	-72.4	
HVAC	Leq,n	11.4	-34.7	-28.9	-25.2	-12.5	-7.8	-14.1	-6.2	-4.6	-5.9	-4.7	-4.9	-3.1	-2.2	-1.4	2.3	4.3	-0.1	1.4	2.1	-0.9	-1.1	-6.1	-7.8	-14.0	-20.2	-34.3	-52.4	-72.4	
HVAC	Leq,d	11.4	-35.0	-29.2	-25.4	-12.6	-7.8	-14.0	-6.1	-4.4	-5.7	-4.7	-4.9	-3.2	-2.2	-1.5	2.2	4.2	-0.2	1.3	1.9	-1.1	-1.4	-6.4	-8.3	-14.7	-21.3	-35.9	-54.7	-75.8	
HVAC	Leq,n	11.4	-35.0	-29.2	-25.4	-12.6	-7.8	-14.0	-6.1	-4.4	-5.7	-4.7	-4.9	-3.2	-2.2	-1.5	2.2	4.2	-0.2	1.3	1.9	-1.1	-1.4	-6.4	-8.3	-14.7	-21.3	-35.9	-54.7	-75.8	
HVAC	Leq,d	10.6	-36.5	-30.6	-26.7	-13.9	-9.0	-15.2	-7.2	-5.5	-6.8	-5.5	-5.7	-3.9	-3.0	-2.2	1.5	3.5	-0.9	0.6	1.2	-1.8	-2.2	-7.3	-9.3	-15.9	-22.8	-37.9	-57.5	-79.6	
HVAC	Leq,n	10.6	-36.5	-30.6	-26.7	-13.9	-9.0	-15.2	-7.2	-5.5	-6.8	-5.5	-5.7	-3.9	-3.0	-2.2	1.5	3.5	-0.9	0.6	1.2	-1.8	-2.2	-7.3	-9.3	-15.9	-22.8	-37.9	-57.5	-79.6	
HVAC	Leq,d	9.5	-37.9	-32.0	-28.1	-15.3	-10.5	-16.7	-8.9	-7.1	-8.4	-6.8	-6.9	-5.1	-4.2	-3.4	0.4	2.4	-2.0	-0.4	0.2	-2.7	-3.1	-8.3	-10.5	-17.4	-24.9	-40.9	-61.8	-85.9	
HVAC	Leq,n	9.5	-37.9	-32.0	-28.1	-15.3	-10.5	-16.7	-8.9	-7.1	-8.4	-6.8	-6.9	-5.1	-4.2	-3.4	0.4	2.4	-2.0	-0.4	0.2	-2.7	-3.1	-8.3	-10.5	-17.4	-24.9	-40.9	-61.8	-85.9	
HVAC	Leq,d	9.7	-37.7	-31.8	-28.0	-15.2	-10.4	-16.6	-8.7	-6.9	-8.2	-6.6	-6.7	-4.9	-4.0	-3.1	0.6	2.6	-1.7	-0.2	0.5	-2.5	-2.8	-8.0	-10.1	-16.9	-24.1	-39.8	-60.2	-83.6	
HVAC	Leq,n	9.7	-37.7	-31.8	-28.0	-15.2	-10.4	-16.6	-8.7	-6.9	-8.2	-6.6	-6.7	-4.9	-4.0	-3.1	0.6	2.6	-1.7	-0.2	0.5	-2.5	-2.8	-8.0	-10.1	-16.9	-24.1	-39.8	-60.2	-83.6	
HVAC	Leq,d	18.5	-35.9	-29.7	-25.7	-12.5	-7.4	-13.2	-4.7	-2.3	-2.9	-0.4	-0.4	1.5	3.5	4.5	8.4	11.4	7.2	9.0	10.0	7.5	7.7	3.5	2.6	-2.3	-6.9	-18.7	-33.6	-49.3	-71.7
HVAC	Leq,n	18.5	-35.9	-29.7	-25.7	-12.5	-7.4	-13.2	-4.7	-2.3	-2.9	-0.4	-0.4	1.5	3.5	4.5	8.4	11.4	7.2	9.0	10.0	7.5	7.7	3.5	2.6	-2.3	-6.9	-18.7	-33.6	-49.3	-71.7
HVAC	Leq,d	17.9	-36.4	-30.4	-26.3	-13.3	-8.2	-14.2	-5.7	-3.6	-4.5	-2.5	-2.2	0.3	2.0	4.1	7.9	10.9	6.8	8.6	9.5	7.0	7.2	2.9	1.9	-3.2	-8.0	-20.1	-35.5	-51.9	-75.2
HVAC	Leq,n	17.9	-36.4	-30.4	-26.3	-13.3	-8.2	-14.2	-5.7	-3.6	-4.5	-2.5	-2.2	0.3	2.0	4.1	7.9	10.9	6.8	8.6	9.5	7.0	7.2	2.9	1.9	-3.2	-8.0	-20.1	-35.5	-51.9	-75.2
HVAC	Leq,d	16.9	-36.9	-30.8	-26.8	-13.8	-8.8	-14.8	-6.4	-4.4	-5.3	-3.5	-3.3	-1.2	0.1	1.5	6.0	9.0	6.3	8.1	9.1	6.5	6.7	2.3	1.2	-4.0	-9.0	-21.5	-37.4	-54.6	-78.8
HVAC	Leq,n	16.9	-36.9	-30.8	-26.8	-13.8	-8.8	-14.8	-6.4	-4.4	-5.3	-3.5	-3.3	-1.2	0.1	1.5	6.0	9.0	6.3	8.1	9.1	6.5	6.7	2.3	1.2	-4.0	-9.0	-21.5	-37.4	-54.6	-78.8
HVAC	Leq,d	16.3	-37.8	-31.7	-27.7	-14.6	-9.5	-15.4	-6.8	-4.7	-5.4	-3.4	-2.8	-0.4	1.6	2.5	6.4	9.4	5.2	7.0	7.9	5.2	5.3	0.8	-0.6	-6.2	-11.8	-25.3	-42.5	-61.6	-88.3
HVAC	Leq,n	16.3	-37.8	-31.7	-27.7	-14.6	-9.5	-15.4	-6.8	-4.7	-5.4	-3.4	-2.8	-0.4	1.6	2.5	6.4	9.4	5.2	7.0	7.9	5.2	5.3	0.8	-0.6	-6.2	-11.8	-25.3	-42.5	-61.6	-88.3

Behavioral Health Victorville Noise
Contribution spectra - 001 - Behavioral Health Victorville: Outdoor SP

Source	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
		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)
HVAC	Leq,d	15.5	-37.4	-31.3	-27.3	-14.3	-9.3	-15.3	-6.9	-5.0	-6.0	-4.2	-4.1	-2.1	-0.9	0.2	4.4	6.9	3.4	6.0	8.3	6.0	6.1	1.6	0.5	-5.0	-10.2	-23.1	-39.5	-57.5	-82.8
HVAC	Leq,n	15.5	-37.4	-31.3	-27.3	-14.3	-9.3	-15.3	-6.9	-5.0	-6.0	-4.2	-4.1	-2.1	-0.9	0.2	4.4	6.9	3.4	6.0	8.3	6.0	6.1	1.6	0.5	-5.0	-10.2	-23.1	-39.5	-57.5	-82.8
HVAC	Leq,d	20.7	-33.8	-27.7	-23.6	-10.5	-5.3	-11.1	-2.3	0.1	-0.3	1.7	1.7	3.7	5.7	6.6	10.6	13.5	9.3	11.2	12.2	9.8	10.2	6.2	5.7	1.4	-2.2	-12.6	-25.5	-38.5	-57.1
HVAC	Leq,n	20.7	-33.8	-27.7	-23.6	-10.5	-5.3	-11.1	-2.3	0.1	-0.3	1.7	1.7	3.7	5.7	6.6	10.6	13.5	9.3	11.2	12.2	9.8	10.2	6.2	5.7	1.4	-2.2	-12.6	-25.5	-38.5	-57.1
HVAC	Leq,d	19.6	-31.2	-25.1	-21.1	-8.1	-3.2	-9.2	-0.6	1.4	0.3	1.7	1.8	3.7	4.7	5.7	9.6	11.8	7.7	9.6	10.7	8.4	9.0	5.3	5.2	1.6	-1.0	-9.8	-20.4	-30.2	-44.5
HVAC	Leq,n	19.6	-31.2	-25.1	-21.1	-8.1	-3.2	-9.2	-0.6	1.4	0.3	1.7	1.8	3.7	4.7	5.7	9.6	11.8	7.7	9.6	10.7	8.4	9.0	5.3	5.2	1.6	-1.0	-9.8	-20.4	-30.2	-44.5
HVAC	Leq,d	20.9	-30.2	-24.1	-20.1	-7.1	-2.2	-8.2	0.4	2.4	1.3	2.8	2.8	4.8	5.8	6.8	10.7	13.0	8.9	10.9	12.0	9.8	10.5	7.0	7.2	3.9	1.9	-6.2	-15.8	-24.1	-36.3
HVAC	Leq,n	20.9	-30.2	-24.1	-20.1	-7.1	-2.2	-8.2	0.4	2.4	1.3	2.8	2.8	4.8	5.8	6.8	10.7	13.0	8.9	10.9	12.0	9.8	10.5	7.0	7.2	3.9	1.9	-6.2	-15.8	-24.1	-36.3
HVAC	Leq,d	15.2	-32.8	-26.9	-23.0	-10.1	-5.3	-11.5	-3.3	-1.5	-2.8	-1.7	-1.8	0.0	1.0	1.8	5.6	7.7	3.5	5.2	6.1	3.5	3.7	-0.6	-1.5	-6.4	-10.8	-22.2	-36.6	-51.5	-72.7
HVAC	Leq,n	15.2	-32.8	-26.9	-23.0	-10.1	-5.3	-11.5	-3.3	-1.5	-2.8	-1.7	-1.8	0.0	1.0	1.8	5.6	7.7	3.5	5.2	6.1	3.5	3.7	-0.6	-1.5	-6.4	-10.8	-22.2	-36.6	-51.5	-72.7

Source	Source group	Source ty	Tr. lane	Leq,d dB(A)	Leq,n dB(A)	A dB	
Receiver R2 Fl G Lr,lim dB(A) Lr,lim dB(A) Leq,d 37.9 dB(A) Leq,n 37.9 dB(A)							
HVAC	Default industrial noise	Point		18.3	18.3	0.0	
HVAC	Default industrial noise	Point		12.5	12.5	0.0	
HVAC	Default industrial noise	Point		16.5	16.5	0.0	
HVAC	Default industrial noise	Point		17.1	17.1	0.0	
HVAC	Default industrial noise	Point		16.7	16.7	0.0	
HVAC	Default industrial noise	Point		18.2	18.2	0.0	
HVAC	Default industrial noise	Point		21.3	21.3	0.0	
HVAC	Default industrial noise	Point		19.3	19.3	0.0	
HVAC	Default industrial noise	Point		21.9	21.9	0.0	
HVAC	Default industrial noise	Point		21.8	21.8	0.0	
HVAC	Default industrial noise	Point		18.7	18.7	0.0	
HVAC	Default industrial noise	Point		18.3	18.3	0.0	
HVAC	Default industrial noise	Point		14.9	14.9	0.0	
HVAC	Default industrial noise	Point		16.1	16.1	0.0	
HVAC	Default industrial noise	Point		12.3	12.3	0.0	
HVAC	Default industrial noise	Point		14.7	14.7	0.0	
HVAC	Default industrial noise	Point		16.3	16.3	0.0	
HVAC	Default industrial noise	Point		7.2	7.2	0.0	
HVAC	Default industrial noise	Point		7.7	7.7	0.0	
HVAC	Default industrial noise	Point		8.4	8.4	0.0	
HVAC	Default industrial noise	Point		8.8	8.8	0.0	
HVAC	Default industrial noise	Point		9.2	9.2	0.0	
HVAC	Default industrial noise	Point		11.0	11.0	0.0	
HVAC	Default industrial noise	Point		6.7	6.7	0.0	
HVAC	Default industrial noise	Point		7.1	7.1	0.0	
HVAC	Default industrial noise	Point		6.1	6.1	0.0	
HVAC	Default industrial noise	Point		6.3	6.3	0.0	
HVAC	Default industrial noise	Point		6.8	6.8	0.0	
HVAC	Default industrial noise	Point		5.7	5.7	0.0	
HVAC	Default industrial noise	Point		7.0	7.0	0.0	
HVAC	Default industrial noise	Point		6.0	6.0	0.0	
HVAC	Default industrial noise	Point		7.6	7.6	0.0	
HVAC	Default industrial noise	Point		6.8	6.8	0.0	
HVAC	Default industrial noise	Point		7.1	7.1	0.0	
HVAC	Default industrial noise	Point		7.9	7.9	0.0	
HVAC	Default industrial noise	Point		7.8	7.8	0.0	
HVAC	Default industrial noise	Point		6.4	6.4	0.0	
	Default parking lot noise	PLot		36.9	36.9	0.0	
Receiver R3 Fl G Lr,lim dB(A) Lr,lim dB(A) Leq,d 41.4 dB(A) Leq,n 41.4 dB(A)							
HVAC	Default industrial noise	Point		11.4	11.4	0.0	
HVAC	Default industrial noise	Point		10.6	10.6	0.0	
HVAC	Default industrial noise	Point		9.5	9.5	0.0	
HVAC	Default industrial noise	Point		9.7	9.7	0.0	

Source	Source group	Source ty	Tr. lane	Leq,d dB(A)	Leq,n dB(A)	A dB	
HVAC	Default industrial noise	Point		11.4	11.4	0.0	
HVAC	Default industrial noise	Point		11.9	11.9	0.0	
HVAC	Default industrial noise	Point		19.0	19.0	0.0	
HVAC	Default industrial noise	Point		19.1	19.1	0.0	
HVAC	Default industrial noise	Point		19.8	19.8	0.0	
HVAC	Default industrial noise	Point		20.7	20.7	0.0	
HVAC	Default industrial noise	Point		19.6	19.6	0.0	
HVAC	Default industrial noise	Point		20.9	20.9	0.0	
HVAC	Default industrial noise	Point		15.2	15.2	0.0	
HVAC	Default industrial noise	Point		15.5	15.5	0.0	
HVAC	Default industrial noise	Point		18.5	18.5	0.0	
HVAC	Default industrial noise	Point		17.9	17.9	0.0	
HVAC	Default industrial noise	Point		16.9	16.9	0.0	
HVAC	Default industrial noise	Point		16.3	16.3	0.0	
HVAC	Default industrial noise	Point		17.4	17.4	0.0	
HVAC	Default industrial noise	Point		15.1	15.1	0.0	
HVAC	Default industrial noise	Point		17.1	17.1	0.0	
HVAC	Default industrial noise	Point		16.4	16.4	0.0	
HVAC	Default industrial noise	Point		15.4	15.4	0.0	
HVAC	Default industrial noise	Point		14.0	14.0	0.0	
HVAC	Default industrial noise	Point		13.5	13.5	0.0	
HVAC	Default industrial noise	Point		12.7	12.7	0.0	
HVAC	Default industrial noise	Point		12.5	12.5	0.0	
HVAC	Default industrial noise	Point		12.9	12.9	0.0	
HVAC	Default industrial noise	Point		8.1	8.1	0.0	
HVAC	Default industrial noise	Point		8.6	8.6	0.0	
HVAC	Default industrial noise	Point		7.9	7.9	0.0	
HVAC	Default industrial noise	Point		8.9	8.9	0.0	
HVAC	Default industrial noise	Point		8.1	8.1	0.0	
HVAC	Default industrial noise	Point		8.5	8.5	0.0	
HVAC	Default industrial noise	Point		8.4	8.4	0.0	
HVAC	Default industrial noise	Point		8.9	8.9	0.0	
HVAC	Default industrial noise	Point		13.5	13.5	0.0	
	Default parking lot noise	PLot		41.0	41.0	0.0	

Behavioral Health Victorville Noise
Octave spectra of the sources in dB(A) - 001 - Behavioral Health Victorville: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	Rw dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Day histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
	PLot	15794.63			55.3	97.3	0.0	0.0		0	100%/24h	Typical spectrum	80.6	92.2	84.7	89.2	89.3	89.7	87.0	80.8	68.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0

Behavioral Health Victorville Noise
Octave spectra of the sources in dB(A) - 001 - Behavioral Health Victorville: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	Rw dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Day histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0

Behavioral Health Victorville Noise
Octave spectra of the sources in dB(A) - 001 - Behavioral Health Victorville: Outdoor SP

Name	Source type	I or A	Li	Rw	L'w	Lw	KI	KT	LwMax	DO-Wall	Day 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				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0
HVAC	Point				74.9	74.9	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	51.2	60.0	62.8	67.6	69.3	69.1	66.1	61.7	50.0

Appendix C:

FHWA Roadway Noise Modeling Worksheets

Compound Growth Factor

Street Name: **Cobalt Road**

Job Number: **1293-2024-07**

Prepared By: **N. Jensen**

Current Volume
1,593

Growth Factor %
3.0%

Over How Many Years
12

Compounded Volume
2271

Period	
1	1,641
2	1,690
3	1,741
4	1,793
5	1,847
6	1,902
7	1,959
8	2,018
9	2,079
10	2,141
11	2,205
12	2,271
13	2,339
14	2,410
15	2,482
16	2,556
17	2,633
18	2,712
19	2,793
20	2,877
21	2,963
22	3,052
23	3,144
24	3,238
25	3,335
26	3,435
27	3,539
28	3,645
29	3,754
30	3,867
31	3,983
32	4,102
33	4,225
34	4,352
35	4,482
36	4,617
37	4,755
38	4,898
39	5,045
40	5,196
41	5,352
42	5,513
43	5,678
44	5,849
45	6,024
46	6,205
47	6,391
18	6,583
49	6,780
50	6,984

Current Ye
Buildout Ye

1/22/2025

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: BEHAVIORAL HEALTH CENTER
ROADWAY: COBALT ROAD
LOCATION: 1ST FLOOR FACADE

JOB #: 1293-24-07
DATE: 22-Jan-25
ENGINEER N. Jensen

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,271	
SPEED =	40	
PK HR % =	10	
NEAR LANE/FAR LANE DI:	25	
ROAD ELEVATION =	0.0	
GRADE =	1.0	%
PK HR VOL =	227	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		60
DIST C/L TO WALL =		48
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVEF		12
PAD ELEVATION =		0.5
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	0.775	0.129	0.096	0.9742
MEDIUM TRUCK	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	58.60	- -
MEDIUM TRUCKS	4.0	58.45	- -
HEAVY TRUCKS	8.0	58.41	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	58.7	56.8	55.1	49.0	57.6	58.2
MEDIUM TRUCKS	50.4	48.9	42.6	41.0	49.5	49.7
HEAVY TRUCKS	51.3	49.9	40.9	42.1	50.5	50.6
NOISE LEVELS (dBA)	60.0	58.2	55.5	50.4	58.9	59.4

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.4	50.5	48.7	42.7	51.3	51.9
MEDIUM TRUCKS	44.6	43.1	36.8	35.2	43.7	43.9
HEAVY TRUCKS	46.3	44.8	35.8	37.0	45.4	45.5
NOISE LEVELS (dBA)	53.9	52.1	49.4	44.3	52.8	53.3

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	17	52	166
LDN	5	15	47	148

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: BEHAVIORAL HEALTH CENTER
ROADWAY: COBALT ROAD
LOCATION: 1ST FLOOR FACADE

JOB #: 1293-24-07
DATE: 22-Jan-25
ENGINEER: N. Jensen

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,630	
SPEED =	40	
PK HR % =	10	
NEAR LANE/FAR LANE DI	25	
ROAD ELEVATION =	0.0	
GRADE =	1.0	%
PK HR VOL =	263	

RECEIVER INPUT DATA

RECEIVER DISTANCE =	60	
DIST C/L TO WALL =	48	
RECEIVER HEIGHT =	5.0	
WALL DISTANCE FROM RECEIVER	12	
PAD ELEVATION =	0.5	
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	0.775	0.129	0.096	0.9742
MEDIUM TRUCK	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	58.60	- -
MEDIUM TRUCKS	4.0	58.45	- -
HEAVY TRUCKS	8.0	58.41	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	59.4	57.5	55.7	49.6	58.3	58.9
MEDIUM TRUCKS	51.1	49.6	43.2	41.7	50.1	50.4
HEAVY TRUCKS	52.0	50.6	41.5	42.8	51.1	51.3
NOISE LEVELS (dBA)	60.6	58.8	56.1	51.0	59.6	60.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	53.0	51.1	49.4	43.3	51.9	52.5
MEDIUM TRUCKS	45.3	43.8	37.4	35.9	44.3	44.6
HEAVY TRUCKS	46.9	45.5	36.4	37.7	46.0	46.2
NOISE LEVELS (dBA)	54.5	52.7	50.0	44.9	53.5	54.0

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	6	19	61	192
LDN	5	17	54	171

Appendix D:
Construction Noise Modeling Outputs

Paving	Paving	3/1/2027	3/26/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	3/29/2027	4/30/2027	5.00	25.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

Receptor - Larrea Middle School to South

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Edge of Site to Receptor, feet	Center of Site to Receptor, feet	Item Usage Percent[1]	Ground Factor[2]	Usage Factor	Receptor Item Lmax, dBA	Recptor. Item Leq, dBA
SITE PREP									
Dozer	3	82	120	540	40	0.66	0.40	71.9	50.5
Tractor	4	84	120	540	40	0.66	0.40	73.9	52.5
							Log Sum	73.9	60.2
GRADE									
Excavator	2	81	120	540	40	0.66	0.40	70.9	49.5
Grader	1	85	120	540	40	0.66	0.40	74.9	53.5
Dozer	1	82	120	540	40	0.66	0.40	71.9	50.5
Scraper	2	84	120	540	40	0.66	0.40	73.9	52.5
Tractor	2	84	120	540	40	0.66	0.40	73.9	52.5
								74.9	60.9
BUILD									
Crane	1	81	120	540	16	0.66	0.16	70.9	45.6
Man lift	3	75	120	540	20	0.66	0.20	64.9	40.5
Generator	1	81	120	540	50	0.66	0.50	70.9	50.5
Tractor	3	84	120	540	40	0.66	0.40	73.9	52.5
Welder/Torch	1	74	120	540	40	0.66	0.40	63.9	42.5
								73.9	58.7
PAVE									
Paver	2	77	120	540	50	0.66	0.50	66.9	46.5
Compactor (ground)	2	83	120	540	20	0.66	0.20	72.9	48.5
Roller	2	80	120	540	20	0.66	0.20	69.9	45.5
								72.9	54.8
ARCH COAT									
Compressor (air)	1	78	120	540	40	0.66	0.40	67.9	46.5
								67.9	46.5

[1]FHWA Construction Noise Handbook: Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

VIBRATION LEVEL IMPACT

Project:	Behavioral Health Center	Date: 1/22/25
Source:	Vibratory Roller	
Scenario:	Unmitigated	
Location:	Victorville, CA	
Address:	Larrea Middle School	

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

DATA INPUT

Equipment = Type	1	Vibratory Roller	INPUT SECTION IN BLUE
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	120.00	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 =	**0.037**	IN/SEC	OUTPUT IN RED