Library Learning Resource Center & Student Services

Noise and Vibration Impact Study

City of Norco, CA

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MD ACOUSTICS
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 City's Noise Guidelines, the project described below must demonstrate compliance to the applicable noise criteria as outlined within the City of Norco Noise Element and Municipal Code.

The following is provided in this report:

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

1.2 Site Location and Study Area

The Riverside Community College District (RCCD) – Norco College (NC) campus is located within the western Riverside County sub-region of southern California. The area is generally south of the City of Ontario, southwest of the City of Riverside, and east of the Prado Dam (see Exhibit A).

Within the Norco Campus, the proposed project will be located on the southern edge of the campus core, adjacent to Parking Lot A. Additionally, the project site will be north of Third Street, east of the sports complex, and west of JFK Drive. Additionally, one of two optional construction laydown areas would be utilized for the project. One is west of the project site, and adjacent to Parking Lot D and West End Drive. The second optional laydown area is located east of the project site and north of Parking Lot B (see Exhibit B).

The current City of Norco General Plan designates the NC campus as Public Land (PL) and zoned as Open Space (OS). The current City of Norco General Plan designations for the land surrounding the campus vary. North of NC the General Plan designation is Preservation and Development (PAD), east of NC is Specific Plan (SP) with a Housing Development Overlay (HDO), south and west the General Plan designation is Residential Agricultural (RA). The zoning indicates that the area north of NC is Preservation and Development (PAD), east is the Norco Auto Mall Specific Plan, south and west is Agricultural Low Density (A-1-20).

1.3 Proposed Project Description

This project proposes to construct a new three-story Library Learning Resource Center and Student Services building at Norco College. The proposed project will expand library and learning resource spaces to meet student needs, and consolidate programs currently housed in the Library, Student

Services Building, and College Resource Center. The new facility will also include modern technology and infrastructure that is essential to student success. The proposed LLRC and Student Services building is planned to encompass 77,430 Gross Square Feet (GSF) and consists of 48,827 Assignable Square Feet (ASF). Functional space within the building will include 1,261 ASF of classrooms, 16,968 ASF of faculty/staff office space, 26,112 ASF of library/library support, 994 ASF of audio/visual media space, and 3,491 ASF of other support space.

The proposed project will be located on the southwestern edge of the campus core, adjacent to Parking Lot D and C. The existing Student Services building, College Resource Center, and Portables A and B will be demolished as secondary effects of the proposed project. Additionally, the existing Library building will be inactivated for future repurposing as a separate capital construction project.

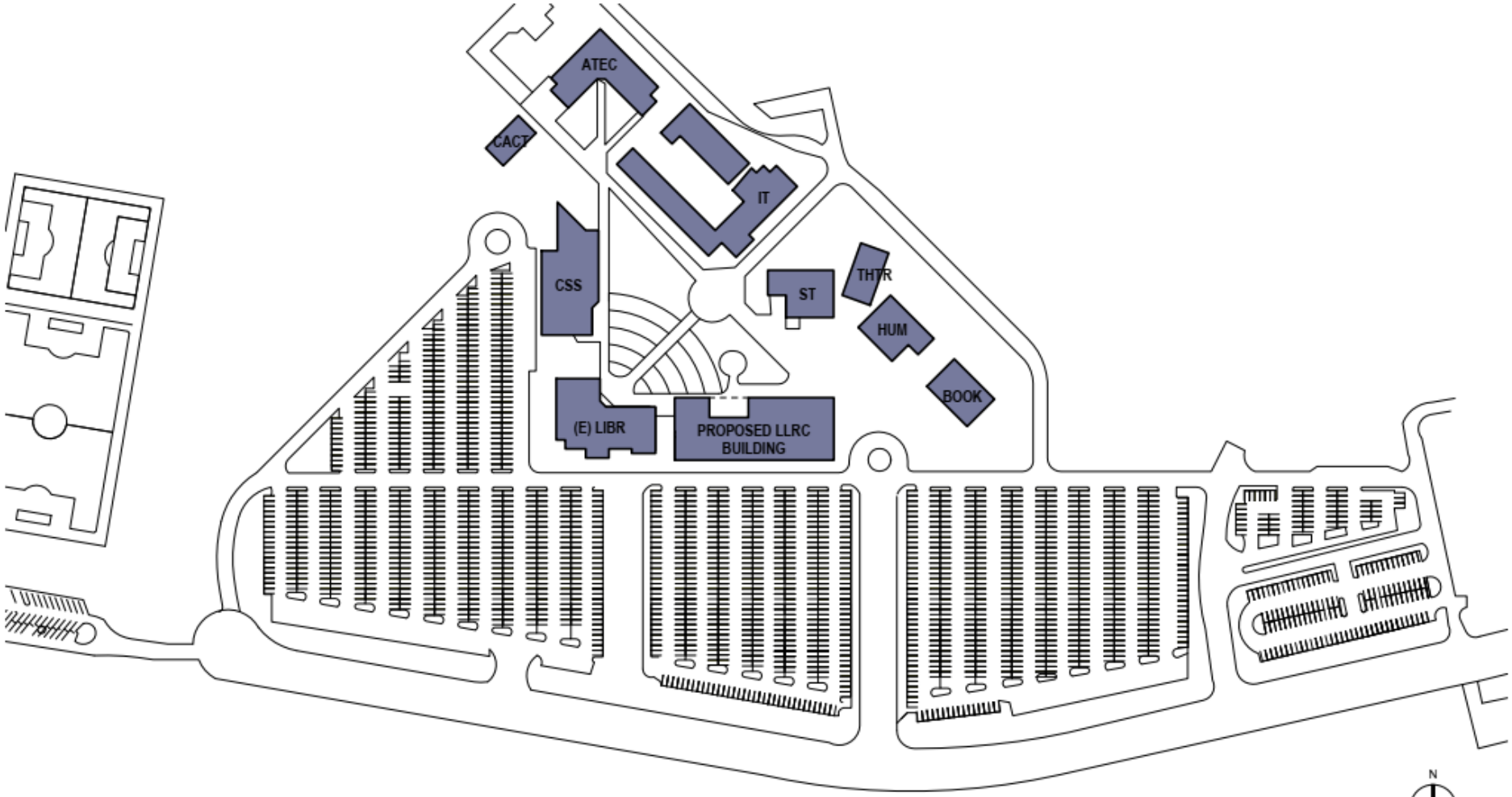
Exhibit A

Location Map



Exhibit B

Site Plan



1 CAMPUS PLOT PLAN
1" = 160'-0"

Issue Date: 05/17/2020

CAMPUS SITE PLAN

CANNONDESIGN ALMA LIBRARY LEARNING RESOURCE CENTER & STUDENT SERVICES RCCD RIVERSIDE COMMUNITY COLLEGE DISTRICT NORCO COLLEGE

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.

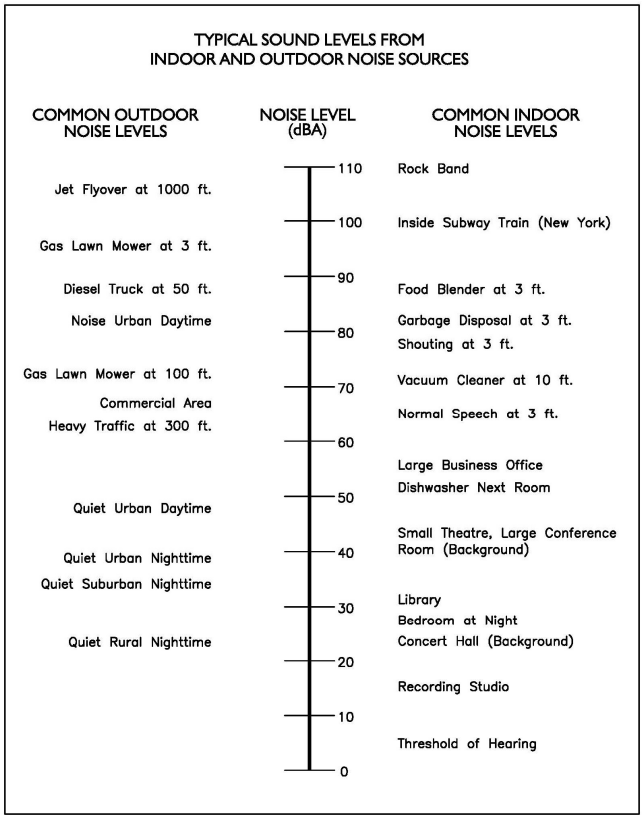
2.1 Sound, Noise, and Acoustics

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. This is 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 pressure wave. The range of sound audible to the average human (from the quietest to the loudest perceptible sound) is difficult to measure on a linear scale: imagine trying to measure something from inches to miles with the same ruler. Therefore, the convention is to use a logarithmic scale, measured in decibels. A decibel is a logarithmic expression comparing a pressure to a reference pressure (20 micro-pascals) that provides a useful way to compare sounds of differing amplitudes.

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. Although ground borne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors; therefore, the vibration level threshold is assessed at occupied structures. Therefore, all vibration impacts are assessed at the structure of an affected property.

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

4.1 Federal Regulations

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

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

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible 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 United States 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.

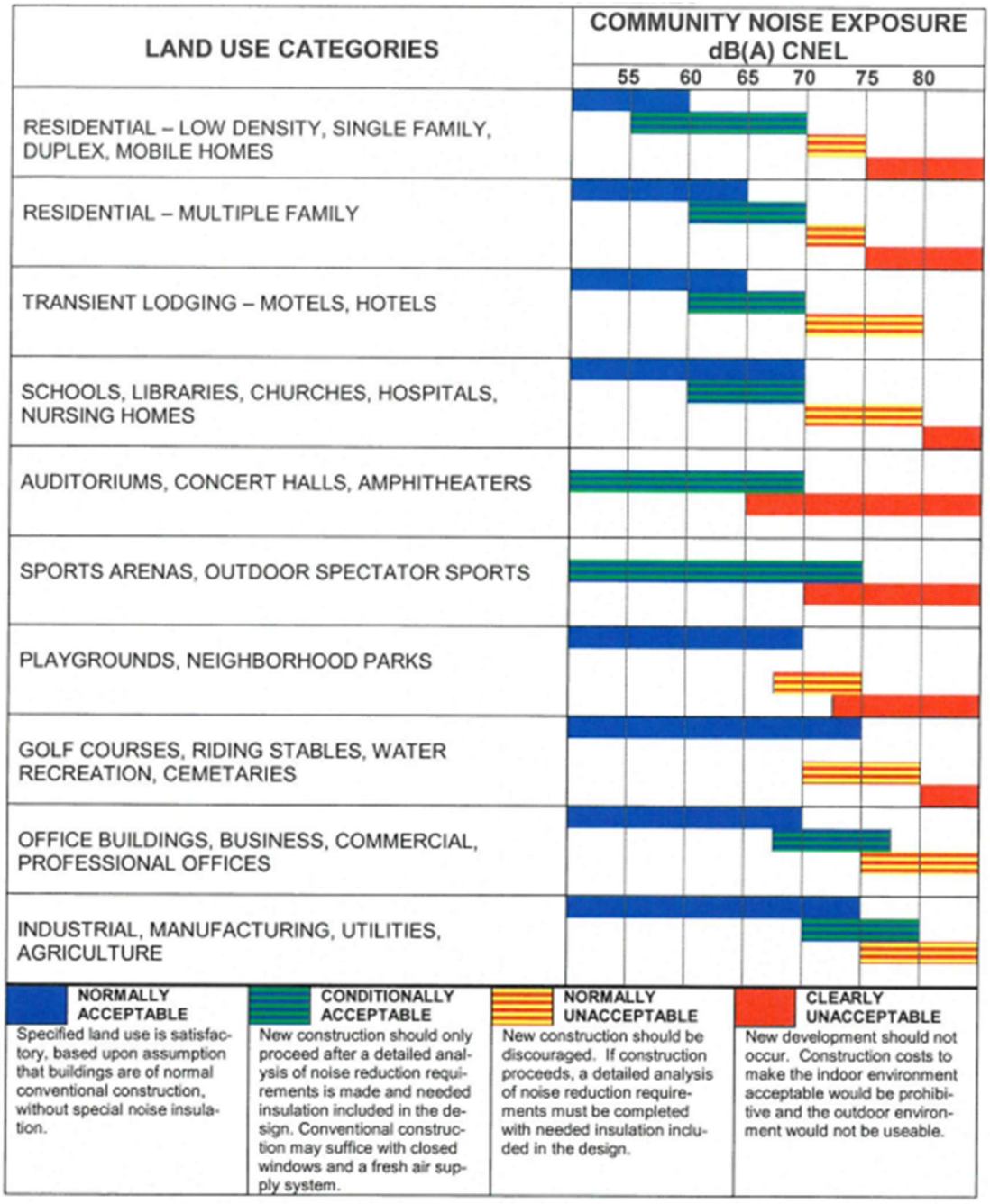
4.2 State Regulations

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 California Building Code (CBC) 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, which presents the City of Norco's adaptation of these guidelines (Table 3.8 of the City of Norco Noise Element).

Exhibit D: Land Use Compatibility Guidelines



4.3 City of Norco Noise Regulations

The City of Norco outlines their noise regulations and standards within the Noise Element from the General Plan and Chapter 9.07 from the Municipal Code.

City of Norco General Plan

Applicable policies and standards governing environmental noise in the City of Norco are set forth in the Noise Element. The City has outlined goals, policies, and implementation measures to reduce potential noise impacts and are presented below:

Goals and Policies
Goals and policies from the Noise Element that would mitigate potential impacts on noise include the following.

2.2 Exterior Noise Control Goal: Control outdoor noise levels to safe and comfortable levels that protect residences and the small plot agricultural/animal-keeping/equestrian lifestyle in the community.

2.2.1 COMMUNITY NOISE CONTROL POLICY: As becomes necessary, the City may consider the adoption of regulations to control noise impacts.

Policy 2.2.1a: One option the City may consider is the adoption of a noise ordinance to regulate the impacts of noise on residential neighborhoods and the small plot agriculture/animal-keeping/equestrian lifestyle of the community.

Policy 2.2.1b: General Plan land uses should be located, as can be reasonably accomplished, to minimize the noise impact conflicts between noise sensitive land uses and noise generators.

2.2.2 CONSTRUCTION NOISE CONTROL POLICY: The City should consider adopting and updating as necessary, regulations to minimize noise impacts from construction sites and equipment to residential areas.

Policy 2.2.2a: New development projects near developed and occupied residential areas should be evaluated for possible submittal of a noise reduction plan prior to the issuance of grading permits.

Policy 2.2.2b: All construction equipment should be equipped with noise attenuation features including mufflers and engine shrouds that are at least as effective as original manufacturer equipment.

Policy 2.2.2c: The City should regulate wherever feasible the hours of operation for construction areas including haul routes that may include residential streets and/or sensitive land uses.

Implementation Measures

4.1 NOISE ORDINANCE
The City may want to consider implementing noise policies that will preserve the small plot agriculture-/animal-keeping/equestrian lifestyle.

4.2 NEW PROJECT DEVELOPMENT REVIEW
Projects that are located in noise-impacted areas should be designed to incorporate the techniques described in Section 3.4 to reduce interior and/or exterior noise levels to acceptable limits. Potential significant noise generators should be required to provide noise analyses in conjunction with project applications to ascertain what noise attenuation measures are appropriate for the anticipated noise impacts.

City of Norco Municipal Code

Chapter 9.07 of the City's Municipal Code further outlines the City's noise regulations.

Section 9.07.020 Exemptions.

I. Private construction; provided, that construction does not occur between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday and 7:00 p.m. and 8:00 a.m., on Saturday and Sunday, unless specified by permit;

J. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 8:00 a.m. and 7:00 p.m.;

L. Heating, exhaust, and air conditioning equipment;

P. Construction-related single events or continuous events subject to a permit issued by the City of Norco. (Ord. 1116 Sec. 1, 2024; Ord. 979 Sec. 1, 2014)

Section 9.07.040 General sound level standards.

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1 (Table 2 of this report) or that violates the special sound source standards set forth in Section 9.07.060.

Table 2: City Sound Level Standards (dB, Lmax)

Land Use	Land Use Designation Name	Maximum Decibel Level	
		8AM – 10PM	10PM – 8AM
Community Development	All Residential	55	45
	All Commercial	65	55
Open Space	Conservation	45	45

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 measurements 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 (Piccolo-II) 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

The noise monitoring locations were selected to obtain a baseline of the existing noise environment. Two (2) long-term noise measurements were conducted at the Project site. Appendix A includes photos, the field sheet, and measured noise data. Exhibit E illustrates the location of the measurement.

5.3 Stationary Noise Modeling

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

The future worst-case daytime noise level projections were modeled using referenced sound level data for the various stationary on-site sources (HVAC, parking). The SP model assumes that every noise source is operating simultaneously (worst-case scenario) when the noise will, in reality, be intermittent and

lower in noise level. Measured and referenced sound level data was utilized to model the various stationary on-site noise sources associated with project operation as shown in Table 3 (see Appendix C).

Parking was modeled using the SoundPLAN parking tool. Daytime vehicle movements per hour for each parking lot area were estimated from the trip generation assessment (provided by Integrated Engineering Group) for the proposed project (i.e., 1 movement per parking spot per hour). A total of 11 HVAC units are assumed for the Library Learning Resource Center & Student Services building, each with a capacity of 12.5 tons. Each HVAC unit will have a sound power level of 83 dBA. The units were modeled as point sources located on the rooftop. As a worst-case scenario, the model assumes that all HVAC units are operating simultaneously and continuously. Appendix B provides the SoundPLAN inputs and outputs.

The future worst-case nighttime noise level projections were also modeled. The model assumes that HVAC units are operating throughout the night but that there is no parking lot traffic during nighttime hours.

Table 3: SoundPLAN Modeling Assumptions

Noise Source	Source Type	Reference Level	Descriptor
12.5-Ton HVAC Unit	Point Source	83	dBA, Lw
Parking	Area (Parking Tool)	1	Movement per hr
Source: See Appendix B.			

5.4 Traffic Noise Impact

Per the project's trip generation assessment, as prepared by Integrated Engineering Group, the project is not expected to generate more than 100 new vehicle trips. Therefore, the project is not expected to result in an increase in traffic and qualifies for an exemption from preparing a Transportation Impact Analysis by the City of Norco. Thus, the traffic noise level projections were not analyzed for this project.

5.5 FHWA Roadway Construction Noise Model

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

The project was analyzed based on the different construction phases. The construction noise calculation output worksheet is in Appendix D.

6.0 Existing Noise Environment

Two (2) 24-hour noise measurements were conducted at the project site to document the existing noise environment. The measurements include the 1-hour Leq, Lmin, Lmax, and other statistical data (e.g. L2, L8). The results of the noise measurements are presented in Tables 4 and 5. Noise measurement field sheets are provided in Appendix A.

Table 4: Long-Term Noise Measurement Data for NM1 (dBA)[1]

Date	Start Time	Stop Time	1-Hour dB(A)							
			L_{EQ}	L_{MAX}	L_{MIN}	L_2	L_8	L_{25}	L_{50}	L_{90}
10/29/2025	11:00 AM	12:00 PM	50.6	64.2	47.9	54.2	51.4	50.4	50.1	49.5
10/29/2025	12:00 PM	1:00 PM	53.7	83	47.8	58.6	53.9	51	50.3	49.4
10/29/2025	1:00 PM	2:00 PM	50	63.2	47.3	53.5	51.5	49.9	49.4	48.8
10/29/2025	2:00 PM	3:00 PM	49.9	63	46.5	52.1	51.1	50.2	49.8	48.5
10/29/2025	3:00 PM	4:00 PM	49.3	65.4	45.1	52.6	50.5	49.5	48.7	47.5
10/29/2025	4:00 PM	5:00 PM	49	60.4	45.8	51.2	50.4	49.3	48.6	48.1
10/29/2025	5:00 PM	6:00 PM	50.3	65.4	46.8	53.4	51.8	50.4	49.8	48.6
10/29/2025	6:00 PM	7:00 PM	50.9	63.9	48	52.4	51.8	51	50.6	49.9
10/29/2025	7:00 PM	8:00 PM	51.3	64.8	49	55.4	52.3	51.1	50.8	50.1
10/29/2025	8:00 PM	9:00 PM	51.1	67.1	49.3	53.8	52.2	51.2	50.9	50.2
10/29/2025	9:00 PM	10:00 PM	52.1	59.3	50	53.5	52.9	52.5	52.1	51
10/29/2025	10:00 PM	11:00 PM	51.8	66.9	50.3	53.3	52.5	52.1	51.7	51.2
10/29/2025	11:00 PM	12:00 AM	51.4	65.8	50.1	52.5	51.8	51.6	51.4	50.9
10/30/2025	12:00 AM	1:00 AM	51.7	59.5	49.1	52.8	52.5	52.1	51.8	51.2
10/30/2025	1:00 AM	2:00 AM	52.1	56.4	50.1	54.1	53.1	52.6	51.9	51.1
10/30/2025	2:00 AM	3:00 AM	52.1	55.7	50.6	53.2	52.9	52.5	52.1	51.4
10/30/2025	3:00 AM	4:00 AM	52.3	57.9	48.9	53.8	53.1	52.7	52.3	51
10/30/2025	4:00 AM	5:00 AM	54.8	59.8	50.2	56.6	56.1	55.5	55.1	52.3
10/30/2025	5:00 AM	6:00 AM	55.4	63.6	53.1	57.7	57	56.3	55.1	54
10/30/2025	6:00 AM	7:00 AM	55.6	77.4	53.4	59.3	56.3	55.5	55.2	54.3
10/30/2025	7:00 AM	8:00 AM	55.5	67.4	53.5	56.6	56.4	55.9	55.5	54.6
10/30/2025	8:00 AM	9:00 AM	55.2	66.4	52.4	58.7	56.6	55.8	54.7	53.4
10/30/2025	9:00 AM	10:00 AM	53.6	72.5	51.3	58	55.3	53.2	52.8	52.5
10/30/2025	10:00 AM	11:00 AM	52.4	70.3	49.4	56.1	53.4	52.4	51.8	51
CNEL			59.8							

Notes:
[1.] Long-term noise monitoring location NM1 is illustrated in Exhibit E. The quietest hourly daytime noise interval is highlighted in yellow. The quietest nighttime noise interval is highlighted in blue.

Table 5: Long-Term Noise Measurement Data for NM2 (dBA)[1]

Date	Start Time	Stop Time	1-Hour dB(A)							
			L_{EQ}	L_{MAX}	L_{MIN}	L_2	L_8	L_{25}	L_{50}	L_{90}
10/29/2025	11:00 AM	12:00 PM	62.5	90.5	45.4	67.8	63.6	59.3	56.7	53.2
10/29/2025	12:00 PM	1:00 PM	61.8	81	46.2	67.9	66	62.6	58.5	54.1
10/29/2025	1:00 PM	2:00 PM	61.4	87.4	43.5	69.6	62.3	58	54.8	49.9
10/29/2025	2:00 PM	3:00 PM	61.2	83.6	42.9	69	64.2	61.4	58.5	54.3
10/29/2025	3:00 PM	4:00 PM	59.2	83.8	40.9	66.7	64.6	58.8	55.3	52
10/29/2025	4:00 PM	5:00 PM	57.3	78.9	43.2	63.3	60.3	57.7	55	52.5
10/29/2025	5:00 PM	6:00 PM	58.3	81.6	45.2	65.7	60.7	58.4	56.1	52.3
10/29/2025	6:00 PM	7:00 PM	60.7	86.8	44.4	70.5	63.9	58	54.4	51.2
10/29/2025	7:00 PM	8:00 PM	55.2	79.5	44.3	64	58.4	54.2	51.5	48.3
10/29/2025	8:00 PM	9:00 PM	57.4	81.6	45.3	66.3	59.4	56	54.3	50.4
10/29/2025	9:00 PM	10:00 PM	57.6	79.1	49.1	62	59.5	57.1	55.8	53
10/29/2025	10:00 PM	11:00 PM	53.4	71.6	47	57.2	56.1	54.1	53	50.6
10/29/2025	11:00 PM	12:00 AM	50.4	60.8	46.6	52.8	52.2	50.8	50.2	48.9
10/30/2025	12:00 AM	1:00 AM	51.4	61.1	46.2	53.9	53.2	52.2	51.1	49.7
10/30/2025	1:00 AM	2:00 AM	53.1	62.2	46.1	56.3	55.5	54.6	53	48.5
10/30/2025	2:00 AM	3:00 AM	52.6	73.8	47.2	55.1	53.3	52.5	51.7	49.7
10/30/2025	3:00 AM	4:00 AM	53.5	61.9	48.1	56.7	56.2	54.8	52.6	50.6
10/30/2025	4:00 AM	5:00 AM	58.4	83.7	50.7	60.3	59.3	57.9	56.3	53.1
10/30/2025	5:00 AM	6:00 AM	58.6	72.7	53.2	62.1	60.5	59.8	58.6	54.9
10/30/2025	6:00 AM	7:00 AM	57.9	73.6	54.1	61.1	59.5	58.1	57.6	56
10/30/2025	7:00 AM	8:00 AM	61.9	79	54.7	66	64.7	62.9	61.3	58
10/30/2025	8:00 AM	9:00 AM	61.1	85.1	51.2	69	64.8	60.4	57.6	54.6
10/30/2025	9:00 AM	10:00 AM	65.5	94.1	50.5	70.6	66.3	62.2	60	55.6
10/30/2025	10:00 AM	11:00 AM	61	86.2	47.2	70.4	63.5	59	56.4	52.9
CNEL			63.4							

Notes:
[1.] Long-term noise monitoring location NM2 is illustrated in Exhibit E. The quietest hourly daytime noise interval is highlighted in yellow. The quietest nighttime noise interval is highlighted in blue.

The data presented in Tables 4 and 5 indicate that ambient noise levels range between 49 and 56 dBA Leq at NM1 and 50 and 66 dBA Leq at NM2. The CNEL was measured as 60 dBA at NM1 and 63 dBA at NM2. The quietest daytime level ranged from 49 to 55 dBA Leq and is highlighted in yellow in each Table. The quietest nighttime level ranged from 50 to 51 dBA Leq and is highlighted in blue in each Table. The field data indicates that traffic along Third Street and noise from the college are the dominant noise sources.

X = Long-Term Measurement Location

Exhibit E

Measurement 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 City's Noise Standards. The analysis details the estimated exterior noise levels associated with traffic from adjacent roadway sources. The City has established different significance thresholds for different types of noise impacts.

7.1 Future Off-Site Exterior Noise

The exterior noise level off-site of the project will be impacted by transportation-related sources and stationary sources from the site. The following outlines the impacts associated with exterior noise levels.

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

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

A total of two (2) receptors were modeled to evaluate the proposed project's operational impact. Exhibit F shows the projected levels at these receptors. A receptor is denoted by a yellow dot. Receptors 1 and 2 represent existing residential uses.

This study compares the Project's operational plus ambient noise levels to the ambient only condition during daytime hours since the proposed building will be closed during nighttime hours.

Project-Only Levels

Exhibit F shows the daytime "Project-Only" noise levels and contours at the nearest sensitive receptors. Daytime operation assumes that HVAC equipment is operating simultaneously and continuously, and that the peak hour project-generated trips occur in each parking area.

The model indicates that the project-only noise levels during daytime operation are 52 dBA Leq at R1 and 53 dBA Leq at R2. The project-only noise levels thus meet the City's daytime noise level limit of 55 dBA Leq for residential uses.

Project Plus Ambient Operational Noise Levels

Table 6 presents the ambient noise level, the project's noise level, and the combined project plus ambient noise level condition for daytime hours. As a worst-case scenario, MD compared the project operational noise level to the quietest existing daytime hourly noise level (49 dBA Leq at 4 PM) to show the maximum potential noise impact due to the project.

Table 6: Worst-Case Predicted Daytime Operational Leq Noise Levels (dBA)

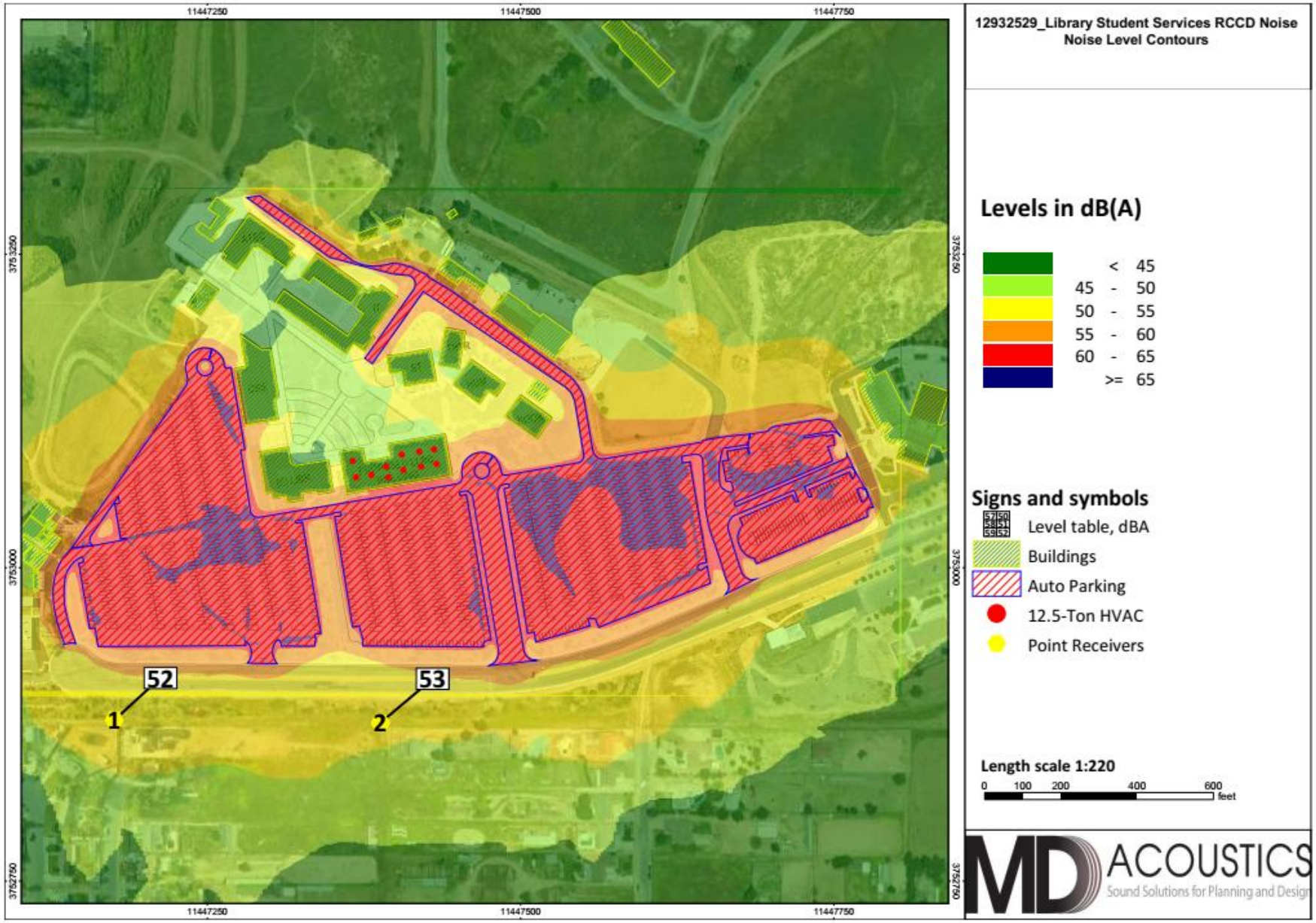
Receptor[1]	Existing Ambient Noise Level (dBA, Leq)[2]	Project Noise Level (dBA, Leq)[3]	Maximum Permitted Daytime Noise Level (dBA, Leq)[4]	Total Combined Noise Level (dBA, Leq)	Change in Noise Level as Result of Project
1	49	52	**55**	54	5
2	49	53	**55**	55	6

Notes:
[1.] Receptors 1 and 2 represent nearby residential uses.
[2.] See Appendix A for the ambient noise measurement.
[3.] See Exhibit F for the daytime operational noise level projections at said receptors.
[4.] See Table 1 of the City's Municipal Code.

As shown in Table 6, project-only noise levels will meet the daytime exterior noise limits for residential uses as defined in Table 1 (Table 2 of this report) of the City's Municipal Code. Project plus ambient noise will increase the existing ambient levels at the nearby residential uses by up to 6 dB, but will be below the maximum permitted daytime noise level at residential uses set forth by the City. Therefore, the change in noise level will comply with the City's noise standards.

Exhibit F

Daytime Operational Noise Levels dBA, Leq



8.0 Construction Noise and Vibration Impacts

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Project construction will occur in six (6) phases: demolition, site preparation, grading, building construction, architectural coating, and trenching. This section summarizes and discusses noise and ground-borne vibration modeling efforts, impact analysis, and mitigation, if necessary.

8.1 Construction Noise

Typical construction equipment noise levels are presented in Table 7.

Table 7: Typical Construction Equipment Noise Levels[1]

EQUIPMENT POWERED BY INTERNAL COMBUSTION ENGINES

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Ground)	80
Front Loaders	80
Backhoes	80
Tractors	84
Scrapers, Graders	85
Pavers	85
Trucks	84
Materials Handling	
Concrete Mixers	85
Concrete Pumps	82
Cranes	85
Stationary	
Pumps	77
Generators	82
Compressors	80

Notes:

[1] Referenced Noise Levels from the FHWA Construction Noise Handbook

Construction noise associated with each phase of the project was calculated at nearby sensitive receptors utilizing methodology presented in the Federal Highway Administration (FHWA) Construction Noise Model 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 was modeled from the center of the proposed building to the nearest residential uses to the south. The trenching phase was modeled from the center of the closest trenching site to the same residential uses.

Noise levels associated with each of the six phases are shown in Table 8. The construction noise calculation output worksheet is located in Appendix D.

Table 8: Construction Noise Level by Phase (dBA, Leq)

Location	Phase	Construction Noise Level (dBA, Leq)
South Residential	Demo	64.7
	Prep	61.8
	Grade	63.1
	Build	60.6
	Arch Coat	51.2
	Trench	60.1

As shown in Table 8, project construction noise will range between 51 to 65 dBA Leq at the nearest sensitive receptors, which are the residential uses south of the project. Noise levels at other sensitive receptors will be insignificant due to increased distance.

The Project will be required to adhere to Section 9.07.020 of the City of Norco Municipal Code which outlines the allowed times for construction. Construction should also adhere to Policies 2.2.2a-c found in the City's General Plan Noise Element. With adherence to the City's requirements on construction, the impact is less than significant.

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 large bulldozer. A large bulldozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is perceptible and can be a risk to nearby fragile structures.

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 the ground)

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

Table 9: Guideline Vibration Damage Potential Threshold Criteria

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

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

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

Table 10: Vibration Source Levels for Construction Equipment

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

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2018.

The nearest existing sensitive use buildings are 330 feet southwest of the edge of the project site's trenching areas. At this distance, a large bulldozer would yield a worst-case 0.005 PPV (in/sec), which is below the threshold for older residential structures and will not result in architectural damage. Therefore, the impact is not significant. The ground-borne vibration worksheet is provided in Appendix E.

9.0 CEQA Analysis

The California Environmental Quality Act Guidelines (Appendix D) establishes thresholds for noise impact analysis as presented below:

(a) Would the project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise Code, or applicable standards of other agencies?

Transportation Noise Impacts

Per the project's trip generation assessment, as prepared by Integrated Engineering Group, the project is not expected to generate more than 100 new vehicle trips. Therefore, the project is not expected to result in an increase in traffic and qualifies for an exemption from preparing a Transportation Impact Analysis by the City of Norco. Thus, the impact is less than significant.

Stationary Noise Sources

Stationary noise impacts would be considered significant if they result in exceedances specified by Table 1 (Table 2 of this report) of the City's Municipal Code. Implementation of the proposed project may result in stationary noise related to rooftop HVAC units and parking. All equipment is required to meet the stationary noise limits of 55 dBA Leq at the adjacent residential uses.

Operational noise levels at the residential uses are expected to reach up to 53 dBA Leq during the day. This noise level meets the City's daytime noise standard of 55 dBA. Therefore, the impact would be less than significant.

Construction Noise and Vibration

Construction noise will not be significant if construction activities follow established hours of operation in accordance with Section 9.07.020 of the City's Municipal Code.

The on-site demolition construction activities will generate the highest temporary noise levels. The loudest construction equipment on the site will be tractors, graders, scrapers, and dozers. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. The maximum Leq level for the loudest phase of construction is expected to be 64.7 dBA Leq at the nearest existing residential uses to the south. These levels are below the FTA recommended limit of 80 dBA Leq for residential uses (refer to Table 7-3 of the FTA Noise and Vibration Manual).

b) Generate excessive ground-borne vibration or ground-borne noise levels?

There is no operational vibration.

Construction vibration will be significant if vibration exceeds levels that would result in structural damage to existing buildings. Construction activity could occur as close as 330 feet away from the nearest buildings, which are the residential buildings to the southwest. At 330 feet away, a large bulldozer would yield a worst-case 0.005 PPV (in/sec) which is below the threshold for older residential structures. Construction activity is not expected to fall within the limits of structural damage, and therefore, the impact is less than significant.

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

The project site is located over 2 miles from the nearest airport, the Corona Municipal Airport, and outside the airport's influence area boundary. Therefore, no substantial noise exposure from airport noise would occur and it would have no impact.

10.0 References

City of Norco
General Plan Noise Element
Municipal Code Chapter 9.07 – Noise Regulations

California Department of Transportation (Caltrans)
2013 Transportation and Construction Induced Vibration Guidance Manual.
2018 Technical Noise Supplement to the Traffic Noise Analysis Protocol. Sept.

Federal Highway Administration (FHWA)
2006 Construction Noise Handbook

Federal Transit Administration (FTA)
2018 Transit Noise and Vibration Impact Assessment Manual

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

SoundPLAN International, LLC
2019 SoundPLAN Essential 8.1 Manual.

Appendix A:

Field Measurement Data

24-Hour Continuous Noise Measurement Datasheet - NM1, NM2

Project Name:	Library Student Services RCCD Noise
Project: #/Name:	1293-2025-029
Site Address/Location:	2001 Third St, Norco, CA 92860
Date:	10/29/2025
Field Tech/Engineer:	Jason Schuyler

Site Observations:

75F, mostly clear skies, winds 0-7MPH. The primary noise source for NM1 is traffic, for NM2, the primary noise source is student talking and pedestrian noise.

Sound Meter:	Piccolo 2, Soft dB	**SN:**	P0220030906
Settings:	A-weighted, slow, 1-min, 24-hour duration		
Site Id:	NM1, NM2		





24-Hour Continuous Noise Measurement Datasheet - Cont. - NM1, NM2

Project Name:	Library Student Services RCCD Noise	**Calibrator:**	Larson Davis Cal 200	
Site Address/Location:	2001 Third St, Norco, CA 92860	**Cal Check: Pre-test:**	0 **Post Test:**	.03
Site Id:	NM1, NM2			

Figure 1: NM1



Figure 2: NM1



Figure 3: NM2



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM1

Project Name:	Library Student Services RCCD Noise	**Site Topo:**	flat	**Day:** 1 of 2	
Site Address/Location:	2001 Third St, Norco, CA 92860	**Meteorological Cond.:**		**Noise Source(s) w/ Distance:**	
Site Id:	NM1	**Ground Type:**	hard	Third St. @78 ft	

Table 1: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
10/29/2025	11:00 AM	12:00 PM	50.6	64.2	47.9	54.2	51.4	50.4	50.1	49.5
10/29/2025	12:00 PM	1:00 PM	53.7	83	47.8	58.6	53.9	51	50.3	49.4
10/29/2025	1:00 PM	2:00 PM	50	63.2	47.3	53.5	51.5	49.9	49.4	48.8
10/29/2025	2:00 PM	3:00 PM	49.9	63	46.5	52.1	51.1	50.2	49.8	48.5
10/29/2025	3:00 PM	4:00 PM	49.3	65.4	45.1	52.6	50.5	49.5	48.7	47.5
10/29/2025	4:00 PM	5:00 PM	49	60.4	45.8	51.2	50.4	49.3	48.6	48.1
10/29/2025	5:00 PM	6:00 PM	50.3	65.4	46.8	53.4	51.8	50.4	49.8	48.6
10/29/2025	6:00 PM	7:00 PM	50.9	63.9	48	52.4	51.8	51	50.6	49.9
10/29/2025	7:00 PM	8:00 PM	51.3	64.8	49	55.4	52.3	51.1	50.8	50.1
10/29/2025	8:00 PM	9:00 PM	51.1	67.1	49.3	53.8	52.2	51.2	50.9	50.2
10/29/2025	9:00 PM	10:00 PM	52.1	59.3	50	53.5	52.9	52.5	52.1	51
10/29/2025	10:00 PM	11:00 PM	51.8	66.9	50.3	53.3	52.5	52.1	51.7	51.2
10/29/2025	11:00 PM	12:00 AM	51.4	65.8	50.1	52.5	51.8	51.6	51.4	50.9
10/30/2025	12:00 AM	1:00 AM	51.7	59.5	49.1	52.8	52.5	52.1	51.8	51.2
10/30/2025	1:00 AM	2:00 AM	52.1	56.4	50.1	54.1	53.1	52.6	51.9	51.1
10/30/2025	2:00 AM	3:00 AM	52.1	55.7	50.6	53.2	52.9	52.5	52.1	51.4
10/30/2025	3:00 AM	4:00 AM	52.3	57.9	48.9	53.8	53.1	52.7	52.3	51
10/30/2025	4:00 AM	5:00 AM	54.8	59.8	50.2	56.6	56.1	55.5	55.1	52.3
10/30/2025	5:00 AM	6:00 AM	55.4	63.6	53.1	57.7	57	56.3	55.1	54
10/30/2025	6:00 AM	7:00 AM	55.6	77.4	53.4	59.3	56.3	55.5	55.2	54.3
10/30/2025	7:00 AM	8:00 AM	55.5	67.4	53.5	56.6	56.4	55.9	55.5	54.6
10/30/2025	8:00 AM	9:00 AM	55.2	66.4	52.4	58.7	56.6	55.8	54.7	53.4
10/30/2025	9:00 AM	10:00 AM	53.6	72.5	51.3	58	55.3	53.2	52.8	52.5
10/30/2025	10:00 AM	11:00 AM	52.4	70.3	49.4	56.1	53.4	52.4	51.8	51

DNL	59.6	CNEL	59.8

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM2

Project Name:	Library Student Services RCCD Noise	**Site Topo:**	flat	**Day:** 2 of 2	
Site Address/Location:	2001 Third St, Norco, CA 92860	**Meteorological Cond.:**		**Noise Source(s) w/ Distance:**	
Site Id:	NM2	**Ground Type:**	hard	Third St. @478 ft	

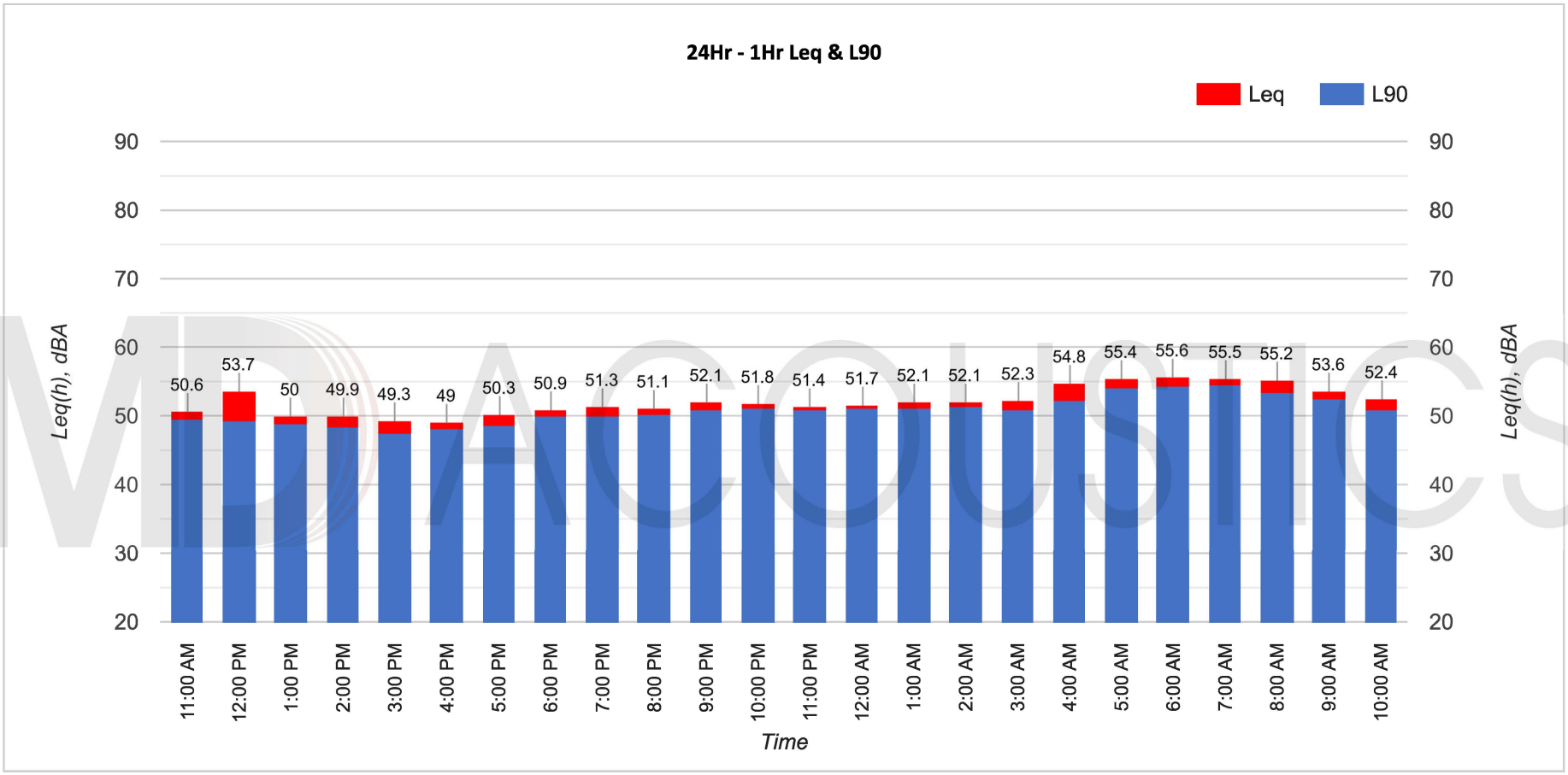
Table 2: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
10/29/2025	11:00 AM	12:00 PM	62.5	90.5	45.4	67.8	63.6	59.3	56.7	53.2
10/29/2025	12:00 PM	1:00 PM	61.8	81	46.2	67.9	66	62.6	58.5	54.1
10/29/2025	1:00 PM	2:00 PM	61.4	87.4	43.5	69.6	62.3	58	54.8	49.9
10/29/2025	2:00 PM	3:00 PM	61.2	83.6	42.9	69	64.2	61.4	58.5	54.3
10/29/2025	3:00 PM	4:00 PM	59.2	83.8	40.9	66.7	64.6	58.8	55.3	52
10/29/2025	4:00 PM	5:00 PM	57.3	78.9	43.2	63.3	60.3	57.7	55	52.5
10/29/2025	5:00 PM	6:00 PM	58.3	81.6	45.2	65.7	60.7	58.4	56.1	52.3
10/29/2025	6:00 PM	7:00 PM	60.7	86.8	44.4	70.5	63.9	58	54.4	51.2
10/29/2025	7:00 PM	8:00 PM	55.2	79.5	44.3	64	58.4	54.2	51.5	48.3
10/29/2025	8:00 PM	9:00 PM	57.4	81.6	45.3	66.3	59.4	56	54.3	50.4
10/29/2025	9:00 PM	10:00 PM	57.6	79.1	49.1	62	59.5	57.1	55.8	53
10/29/2025	10:00 PM	11:00 PM	53.4	71.6	47	57.2	56.1	54.1	53	50.6
10/29/2025	11:00 PM	12:00 AM	50.4	60.8	46.6	52.8	52.2	50.8	50.2	48.9
10/30/2025	12:00 AM	1:00 AM	51.4	61.1	46.2	53.9	53.2	52.2	51.1	49.7
10/30/2025	1:00 AM	2:00 AM	53.1	62.2	46.1	56.3	55.5	54.6	53	48.5
10/30/2025	2:00 AM	3:00 AM	52.6	73.8	47.2	55.1	53.3	52.5	51.7	49.7
10/30/2025	3:00 AM	4:00 AM	53.5	61.9	48.1	56.7	56.2	54.8	52.6	50.6
10/30/2025	4:00 AM	5:00 AM	58.4	83.7	50.7	60.3	59.3	57.9	56.3	53.1
10/30/2025	5:00 AM	6:00 AM	58.6	72.7	53.2	62.1	60.5	59.8	58.6	54.9
10/30/2025	6:00 AM	7:00 AM	57.9	73.6	54.1	61.1	59.5	58.1	57.6	56
10/30/2025	7:00 AM	8:00 AM	61.9	79	54.7	66	64.7	62.9	61.3	58
10/30/2025	8:00 AM	9:00 AM	61.1	85.1	51.2	69	64.8	60.4	57.6	54.6
10/30/2025	9:00 AM	10:00 AM	65.5	94.1	50.5	70.6	66.3	62.2	60	55.6
10/30/2025	10:00 AM	11:00 AM	61	86.2	47.2	70.4	63.5	59	56.4	52.9

DNL	63.1	CNEL	63.4	

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM1

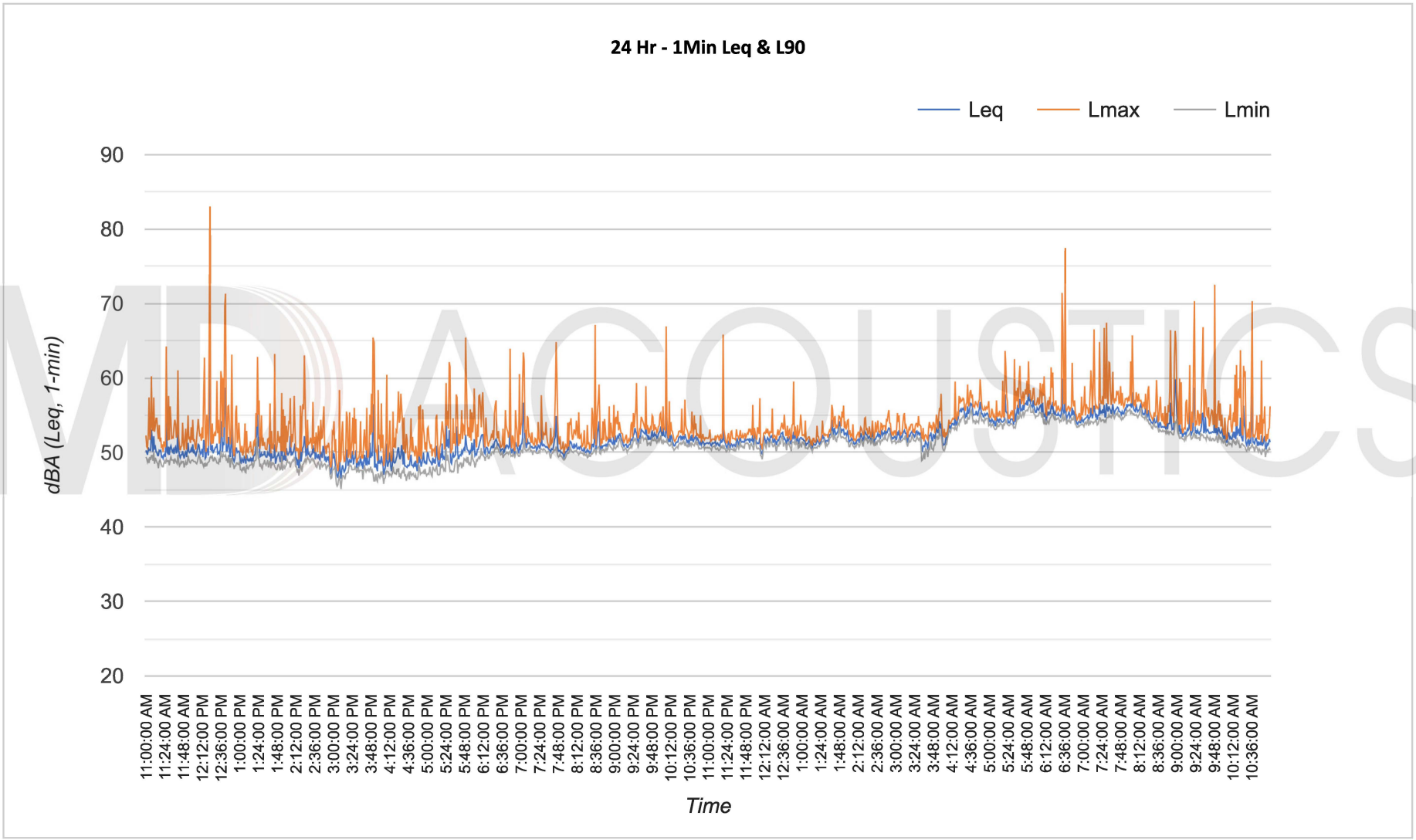
Project Name:	Library Student Services RCCD Noise	**Site Topo:**	flat	**Day:** 1 of 2	
Site Address/Location:	2001 Third St, Norco, CA 92860	**Meteorological Cond.:**		**Noise Source(s) w/ Distance:**	
Site Id:	NM1	**Ground Type:**	hard	Third St. @78 ft	



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM1

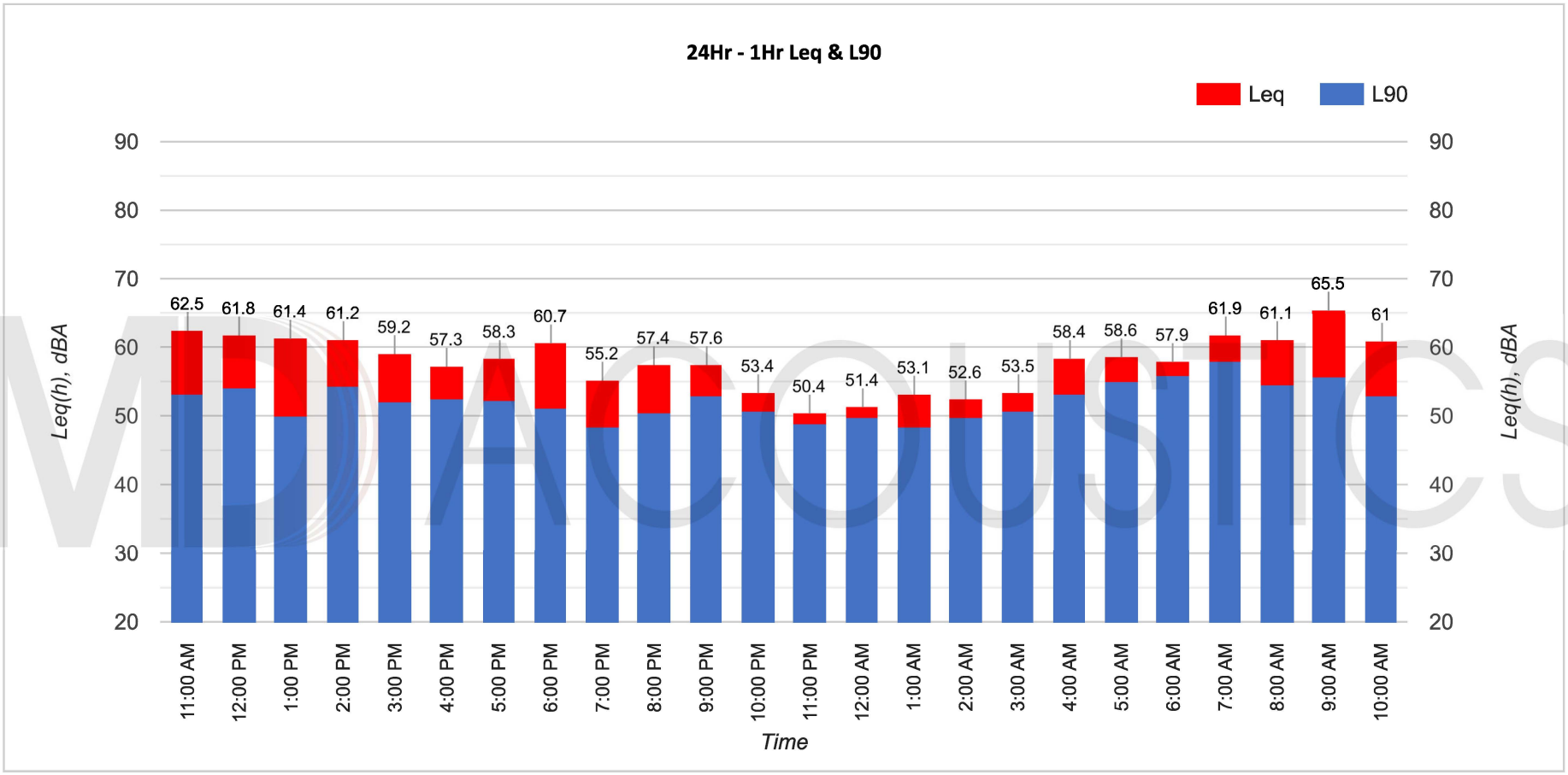
Project Name:	Library Student Services RCCD Noise	**Site Topo:**	flat	**Day:** 1 of 2	
Site Address/Location:	2001 Third St, Norco, CA 92860	**Meteorological Cond.:**		**Noise Source(s) w/ Distance:**	
Site Id:	NM1	**Ground Type:**	hard	Third St. @78 ft	



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM2

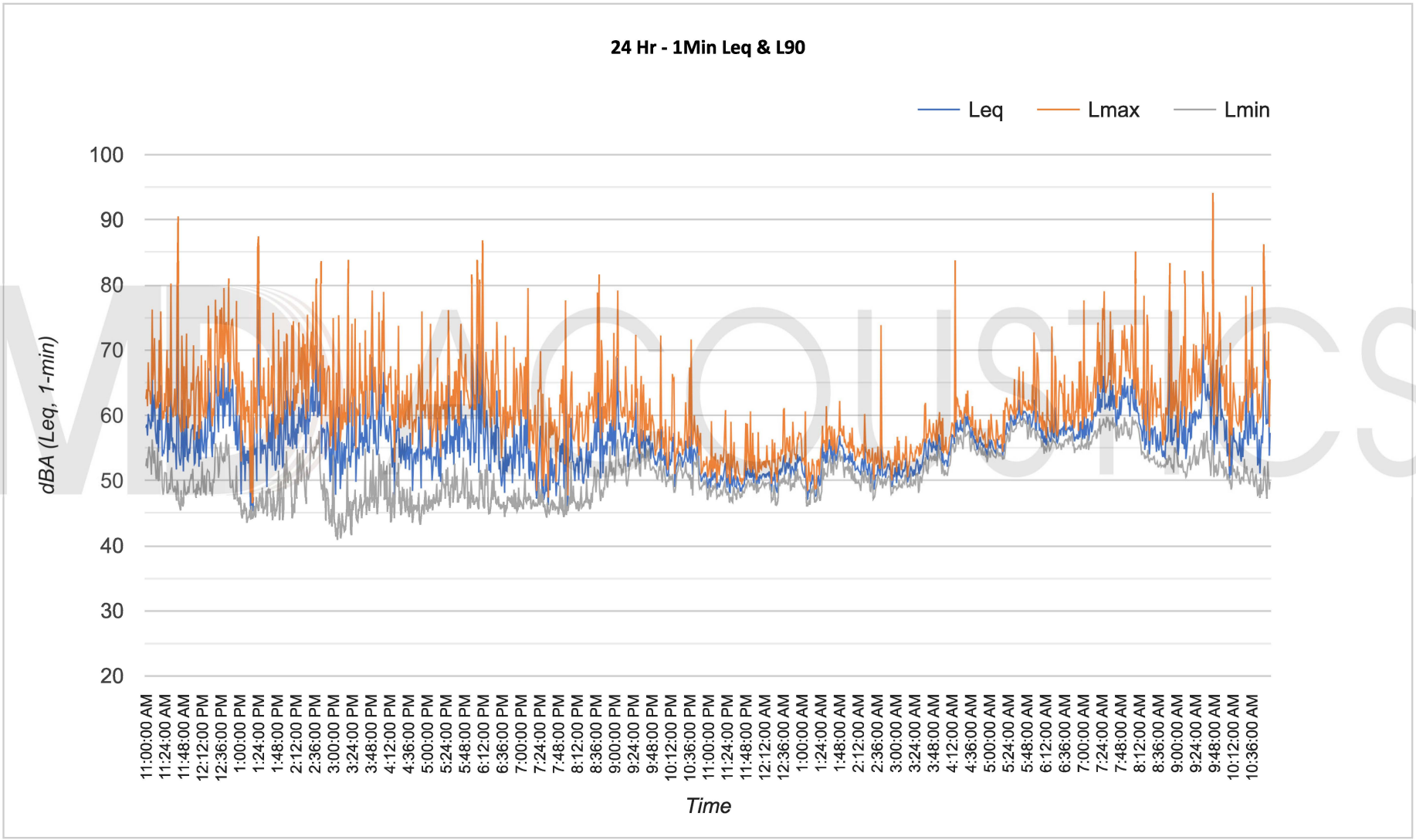
Project Name:	Library Student Services RCCD Noise	**Site Topo:**	flat	**Day:** 1 of 2	
Site Address/Location:	2001 Third St, Norco, CA 92860	**Meteorological Cond.:**		**Noise Source(s) w/ Distance:**	
Site Id:	NM2	**Ground Type:**	hard	Third St. @478 ft	



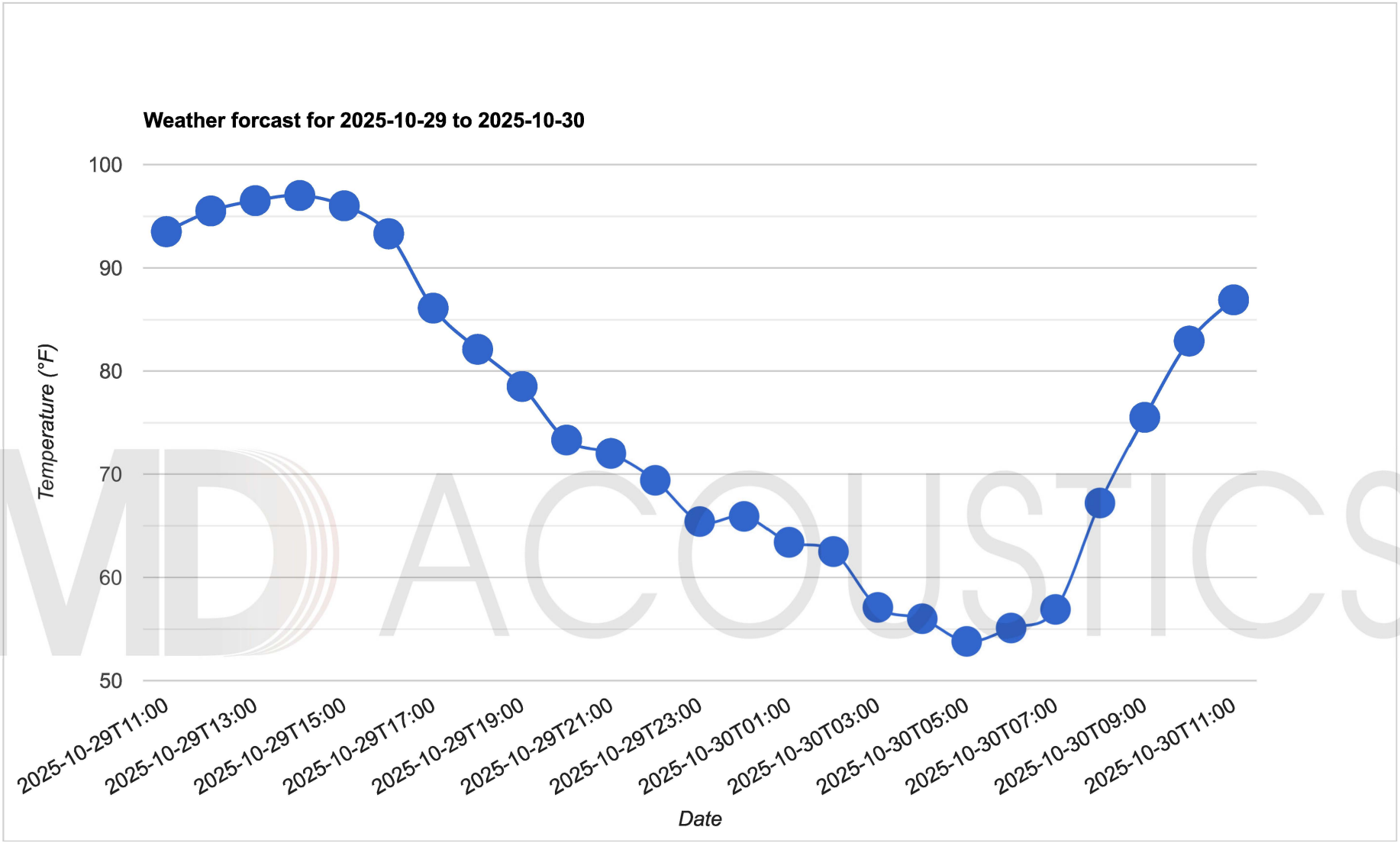
MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM2

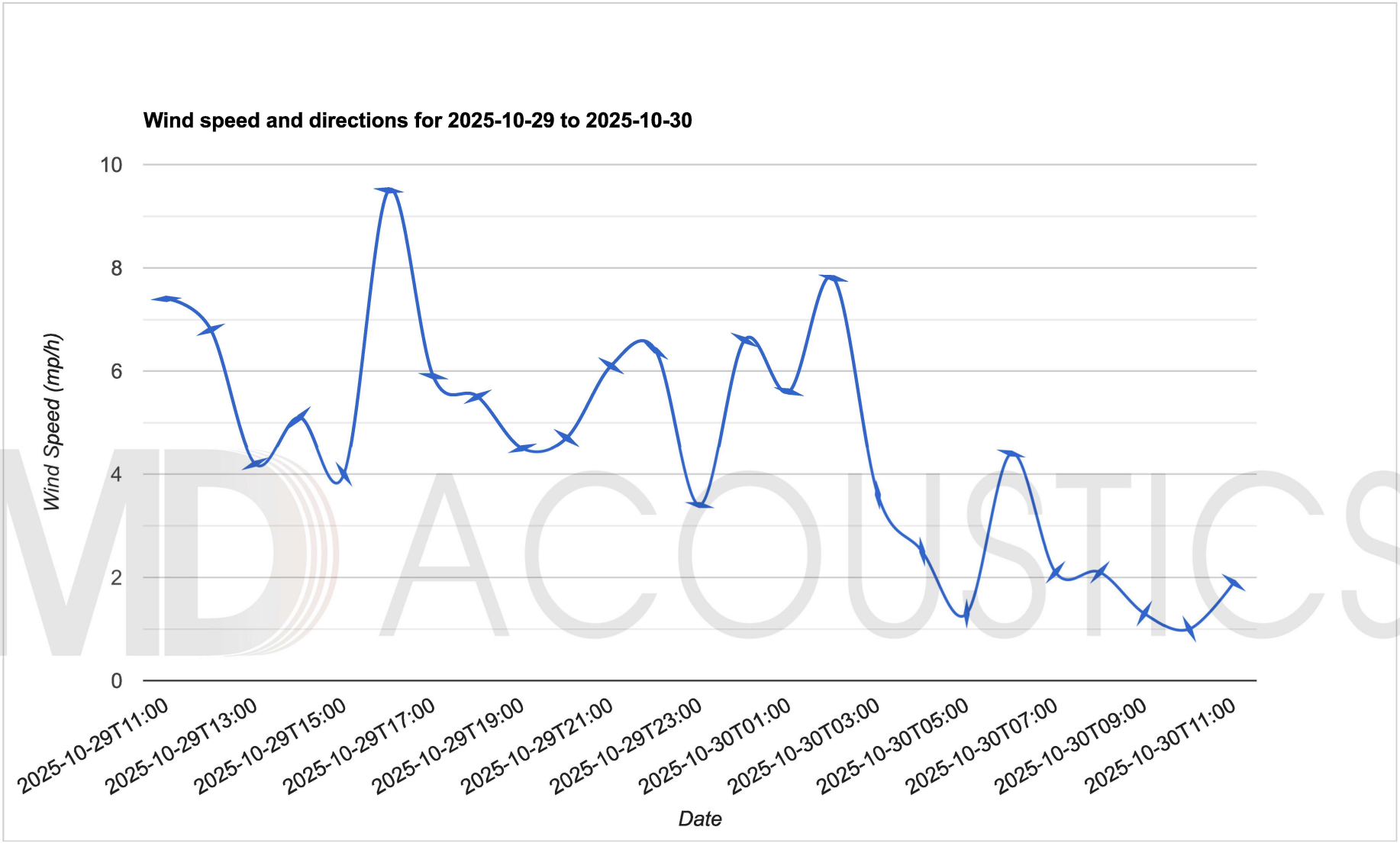
Project Name:	Library Student Services RCCD Noise	**Site Topo:**	flat	**Day:** 1 of 2	
Site Address/Location:	2001 Third St, Norco, CA 92860	**Meteorological Cond.:**		**Noise Source(s) w/ Distance:**	
Site Id:	NM2	**Ground Type:**	hard	Third St. @478 ft	



MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model



Source: Global Forecast System (GFS) weather forcast model

Appendix B:

SoundPLAN Input/Outputs

Library Student Services RCCD Noise
Contribution spectra - 001 - Library Student Services RCCD: Outdoor SP

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz	
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Receiver R1 Fl G Lr,lim dB(A) Leq,d 51.8 dB(A)																																
Leq,d	51.7					37.8			47.6			36.8			42.3			44.6			44.5			38.7			23.5			-9.4		
Leq,d	18.2	-32.0	-26.0	-22.0	-9.0	-4.1	-10.1	-1.0	0.9	-0.2	0.7	0.7	2.6	4.2	5.1	9.0	11.1	6.9	8.6	9.3	6.6	6.4	1.4	-0.5	-7.2	-14.4	-30.1	-50.9	-74.8			
Leq,d	16.7	-32.9	-26.9	-22.9	-9.9	-5.0	-11.0	-2.5	-0.6	-1.7	-0.5	-0.6	1.3	2.9	3.9	7.7	9.8	5.5	7.1	7.7	4.7	4.2	-1.2	-3.8	-11.6	-20.4	-38.5	-62.7	-91.5			
Leq,d	17.1	-32.6	-26.6	-22.6	-9.6	-4.7	-10.7	-2.2	-0.3	-1.4	-0.3	-0.3	1.6	3.2	4.2	8.0	10.1	5.8	7.5	8.1	5.1	4.7	-0.7	-3.2	-10.7	-19.3	-37.0	-60.5	-88.4			
Leq,d	18.1	-32.1	-26.1	-22.1	-9.1	-4.2	-10.2	-1.2	0.7	-0.4	0.5	0.5	2.4	4.1	5.0	8.9	11.0	6.8	8.5	9.3	6.5	6.3	1.4	-0.6	-7.3	-14.6	-30.5	-51.4	-75.6			
Leq,d	16.6	-33.0	-27.0	-23.0	-10.0	-5.0	-11.1	-2.6	-0.7	-1.8	-0.7	-0.7	1.2	2.8	3.7	7.6	9.7	5.4	7.0	7.5	4.5	4.0	-1.5	-4.2	-12.1	-21.0	-39.5	-64.0	-93.4			
Leq,d	18.0	-32.0	-26.0	-22.0	-9.0	-4.0	-10.1	-1.3	0.6	-0.5	0.5	0.5	2.4	4.0	5.0	8.8	11.0	6.7	8.4	9.0	6.2	5.9	0.8	-1.3	-8.3	-15.9	-32.3	-53.8	-79.0			
Leq,d	17.4	-32.4	-26.4	-22.4	-9.4	-4.5	-10.5	-1.9	0.0	-1.1	0.0	0.0	1.9	3.5	4.4	8.3	10.4	6.1	7.8	8.4	5.5	5.1	-0.1	-2.6	-9.9	-18.0	-35.3	-58.1	-85.0			
Leq,d	17.2	-32.4	-26.4	-22.4	-9.4	-4.5	-10.5	-2.1	-0.2	-1.3	-0.1	-0.2	1.7	3.4	4.3	8.2	10.3	6.0	7.6	8.2	5.3	4.8	-0.5	-3.0	-10.5	-18.9	-36.5	-59.8	-87.3			
Leq,d	16.9	-32.7	-26.6	-22.7	-9.7	-4.7	-10.7	-2.4	-0.5	-1.6	-0.4	-0.4	1.5	3.1	4.1	7.9	10.0	5.7	7.3	7.9	4.9	4.4	-1.0	-3.6	-11.3	-20.0	-38.0	-62.0	-90.5			
Leq,d	17.8	-32.2	-26.2	-22.2	-9.2	-4.3	-10.3	-1.5	0.4	-0.7	0.3	0.3	2.2	3.8	4.8	8.6	10.7	6.5	8.2	8.8	6.0	5.7	0.5	-1.7	-8.8	-16.5	-33.2	-55.2	-80.9			
Leq,d	17.7	-32.2	-26.1	-22.2	-9.2	-4.2	-10.2	-1.7	0.2	-0.9	0.2	0.2	2.1	3.8	4.7	8.6	10.7	6.4	8.1	8.7	5.8	5.5	0.3	-2.0	-9.2	-17.2	-34.1	-56.4	-82.6			
Receiver R2 Fl G Lr,lim dB(A) Leq,d 53.0 dB(A)																																
Leq,d	53.0					39.0			48.8			38.0			43.3			45.8			46.0			39.9			23.8			-10.4		
Leq,d	21.7	-29.3	-23.3	-19.3	-6.3	-1.4	-7.4	1.9	3.8	2.8	3.5	3.6	5.5	7.1	8.1	12.1	14.3	10.1	12.0	12.9	10.4	10.7	6.5	5.6	0.6	-4.1	-16.1	-31.3	-49.0	-74.3		
Leq,d	20.9	-30.0	-23.9	-19.9	-6.9	-2.0	-8.0	1.0	2.9	1.9	2.9	2.9	4.8	6.5	7.4	11.4	13.6	9.4	11.2	12.1	9.6	9.8	5.4	4.3	-1.0	-6.2	-19.0	-35.4	-53.4	-80.3		
Leq,d	21.1	-29.8	-23.7	-19.8	-6.8	-1.8	-7.8	1.2	3.1	2.0	3.1	3.1	5.0	6.7	7.6	11.6	13.8	9.6	11.5	12.4	9.9	10.1	5.8	4.7	-0.5	-5.5	-18.1	-34.0	-52.1	-78.6		
Leq,d	20.7	-29.9	-23.9	-19.9	-6.9	-1.9	-7.9	1.2	3.1	2.1	2.9	2.9	4.8	6.4	7.4	11.3	13.4	9.2	11.0	11.8	9.1	9.2	4.7	3.3	-2.3	-8.0	-21.4	-38.7	-57.8	-84.6		
Leq,d	20.1	-30.4	-24.4	-20.4	-7.4	-2.4	-8.4	0.5	2.4	1.3	2.4	2.4	4.3	5.9	6.9	10.7	12.9	8.7	10.4	11.2	8.5	8.5	3.9	2.4	-3.4	-9.4	-23.3	-41.3	-61.4	-89.5		
Leq,d	21.6	-29.4	-23.4	-19.4	-6.4	-1.4	-7.4	1.6	3.6	2.5	3.5	3.5	5.4	7.1	8.1	12.0	14.2	10.1	11.9	12.9	10.4	10.7	6.4	5.5	0.5	-4.2	-16.3	-31.4	-49.4	-74.8		
Leq,d	21.5	-29.6	-23.6	-19.6	-6.6	-1.6	-7.6	1.4	3.4	2.3	3.3	3.3	5.3	6.9	7.9	11.8	14.0	9.9	11.8	12.7	10.3	10.6	6.4	5.5	0.5	-4.2	-16.0	-32.2	-50.7	-76.7		
Leq,d	20.4	-30.1	-24.1	-20.1	-7.1	-2.1	-8.1	0.8	2.7	1.6	2.7	2.7	4.6	6.2	7.2	11.1	13.2	9.0	10.8	11.6	8.9	9.0	4.4	3.0	-2.7	-8.5	-22.1	-39.6	-59.1	-86.4		
Leq,d	20.3	-30.2	-24.2	-20.2	-7.2	-2.3	-8.3	0.6	2.5	1.5	2.5	2.5	4.5	6.1	7.0	10.9	13.1	8.9	10.6	11.4	8.7	8.8	4.2	2.7	-3.1	-8.9	-22.7	-40.5	-60.3	-87.9		
Leq,d	23.8	-29.3	-23.2	-19.2	-6.2	-1.3	-7.2	1.9	3.8	2.8	3.8	3.9	5.9	7.7	8.8	12.9	15.4	11.6	14.0	15.7	14.5	14.8	10.3	9.2	3.8	-1.5	-14.4	-30.8	-48.8	-74.0		
Leq,d	20.9	-29.7	-23.6	-19.7	-6.7	-1.7	-7.7	1.2	3.2	2.1	3.1	3.1	5.1	6.7	7.6	11.5	13.7	9.5	11.3	12.1	9.4	9.5	5.0	3.8	-1.8	-7.3	-20.5	-37.4	-56.1	-82.2		

Library Student Services RCCD Noise
Contribution level - 001 - Library Student Services RCCD:

Source group	Source ty	Tr. lane	Leq,d dB(A)	A dB	
Receiver R1 Fl G Lr,lim dB(A) Leq,d 51.8 dB(A)					
Default parking lot noise	PLot		51.7	0.0	
Default industrial noise	Point		17.4	0.0	
Default industrial noise	Point		17.2	0.0	
Default industrial noise	Point		16.9	0.0	
Default industrial noise	Point		17.8	0.0	
Default industrial noise	Point		17.7	0.0	
Default industrial noise	Point		18.0	0.0	
Default industrial noise	Point		18.2	0.0	
Default industrial noise	Point		16.7	0.0	
Default industrial noise	Point		17.1	0.0	
Default industrial noise	Point		18.1	0.0	
Default industrial noise	Point		16.6	0.0	
Receiver R2 Fl G Lr,lim dB(A) Leq,d 53.0 dB(A)					
Default parking lot noise	PLot		53.0	0.0	
Default industrial noise	Point		21.5	0.0	
Default industrial noise	Point		20.4	0.0	
Default industrial noise	Point		20.3	0.0	
Default industrial noise	Point		23.8	0.0	
Default industrial noise	Point		20.9	0.0	
Default industrial noise	Point		21.6	0.0	
Default industrial noise	Point		21.7	0.0	
Default industrial noise	Point		20.9	0.0	
Default industrial noise	Point		21.1	0.0	
Default industrial noise	Point		20.7	0.0	
Default industrial noise	Point		20.1	0.0	

Library Student Services RCCD Noise
Octave spectra of the sources in dB(A) - 001 - Library Student Services RCCD: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Auto Parking	PLot	78057.62			59.3	108.3	0.0	0.0		0	100%/24h	Typical spectrum	91.6	103.2	95.7	100.2	100.3	100.7	98.0	91.8	79.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0
HVAC	Point				83.0	83.0	0.0	0.0		0	100%/24h	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	60.1	68.6	71.0	75.3	77.6	77.2	74.2	69.3	57.0

Appendix C:

Traffic Information and Noise Modeling Worksheets

INTEGRATED ENGINEERING GROUP

TRANSPORTATION PLANNING AND ENGINEERING

Date: October 27, 2025

To: Mehran Mohtasham, Director of Capital Planning, Riverside Community College District

From: George Ghossain, Principal Engineer, Integrated Engineering Group

Subject: Trip Generation Assessment for The Library Learning Resource Center (LLRC) Project

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Integrated Engineering Group (IEG) is pleased to submit this trip generation assessment memo for the proposed Library Learning Resource Center (LLRC) project (Project) located at 2001 Third St in the City of Norco California. The proposed LLRC will be located on the southern edge of the Norco College Campus core, adjacent to Parking Lot A, north of Third Street, east of the sports complex, and west of Windy Way.

The objective of the proposed Project is to develop a modernized LLRC facility that aligns with current instructional requirements and student needs. The existing Student Services building, and College Resource Center will be demolished as secondary effects of the proposed project. Additionally, the existing Library building will be inactivated for future repurposing as a separate capital construction project.

Space limitations within the existing Library building impact multiple Library and Learning Resource functions. Silent study and testing/proctoring rooms are in short supply in the existing facilities. For example, the Disability Resource Center (DRC) testing space in the existing facility is housed within the library and does not have its own dedicated space. This results in the DRC testing space needing to compete with the general student population for quiet reading/study rooms within the building. Additionally, the space dedicated to house the print collection does not hold enough titles to meet the needs of students. Similarly, space dedicated to the circulation desk remains too low to distribute titles readily and conveniently to all students. This includes very low levels of space dedicated to book archival, repair, and cataloging. The College must address these shortcomings to provide access to essential materials such as textbooks or course-assigned titles. Some Library and Learning Resource spaces within the existing facility have been converted into offices and workstations for faculty and staff. The microfiche room has been converted into an office for the Library Dean. The area in front of the Library Dean's office has been converted into an Administrative Assistant workstation, and two library study rooms have been converted into Librarian offices.

Technology infrastructure gaps within the existing Library prevent the facility from adequately serving the College's student body. As of the 2019-2020 academic year, there was only one desktop computer for every 218 students and one laptop for every 424 students on campus. Additionally, current facilities cannot support planned programs such as an engineering room, STEM demonstration area, or video production suite. The technology and space shortage prevent the College from implementing not only the planned programs mentioned above but also basic

resources such as an Information Technology Help Desk to assist users troubleshoot with computers or connection issues.

Faculty members within the existing Student Services and College Resource Center buildings face similar obstacles to providing critical student services in an equitable and efficient manner. These buildings are home to the campus police department, financial aid, admissions and records, specialized counseling programs, and administration. In the Fall 2022 term, 4,968 students received counseling/advisement services, 1,268 students received educational plan services, and 2,479 students received other student services. These services include counseling, transfer advising, and specialized academic mentoring services. The large volume of daily students in an undersized facility has led to significant overflow issues. Postponing or relocating meetings outdoors or to classrooms commonly occurs due to a lack of private spaces within the existing facilities. Additionally, peak-hour computer usage exceeds capacity, resulting in waiting lists to access student services. No more than two transfer admission representatives can work at one time due to limited workstations. The enrollment services department in the Student Services building lacks sufficient computer space to accommodate student demand. Students are often sent to another floor of the building to access computers. The College police department in the Resource Center also has a shortage of space for workstations and computer equipment.

The Proposed LLRC project will construct a new 3-story building which increases space capacity within laboratory, office, library, and audio/visual media space on campus. The project will include updated infrastructure, technology capabilities, accessibility, and energy efficiency. The new LLRC facility will encompass 77,430 Gross Square Feet (GSF) and consist of 48,827 Assignable Square Feet (ASF). Functional space within the building will include 1,261 ASF of classroom, 16,968 ASF of office, 26,112 ASF of library, 994 ASF of audio/visual, and 3,491 ASF of other support space.

Our goal is to obtain comments from City of Norco staff, to ensure this scoping agreement addresses the analysis requirements for the project, according to the City of Norco *Vehicle Miles Traveled (VMT) Resolution No. 2020-62* and Western Riverside Council of Governments (WRCOG) *Recommended Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (January 2020)*.

The preliminary project plans are provided in **Attachment 1**. The Project is anticipated to be constructed in a single phase. Two potential unpaved construction laydown areas are identified north of the proposed project site—one located on the west side adjacent to the sports complex, and the other on the east side adjacent to the operations center. The Parking Lots have been determined to be underutilized and would not impact campus parking by losing parking spaces to the new construction.

NEED TO COMPLETE LOS AS PART OF THE TIA ANALYSIS

Western Riverside Council of Governments (WRCOG) *Recommended Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (January 2020)* provide activities that would not require a TIA that includes level of service analysis based on land use type or limited trip generation.

TRIP GENERATION

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. The traffic generated is a function of the extent and type of development proposed for the site. These trips will result in some traffic increases on the streets where they occur. Per the Guidelines, trip generation for proposed uses must be calculated based on rates from the *Trip Generation Manual (TGM), 12th Edition*, published by the Institute of Transportation Engineers (ITE) and rates that are developed based on the specific project operational information provided by the site operator. The rates were then applied to determine if this Project net trips generation satisfy the thresholds to be exempt from preparing a TIA with LOS.

The proposed project will replace existing aging facilities with a modern building featuring updated technology and infrastructure designed to fully support the needs of Norco College's faculty and students. This enhancement aims to improve the overall learning environment and student experience.

Since the project will replace aging facilities and primarily serve existing students population who will benefit from the upgraded facility, no additional vehicle trips are anticipated. Therefore, a Level of Service (LOS) analysis is not required, as the project is not expected to generate new trips or result in 100 or more vehicle trips during the peak hour.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment is the process of identifying the probable destinations, directions and traffic routes that Project related traffic will likely affect. Trip distribution and assignment are not applicable in this case since the project has demonstrated that it will generate less than 100 vehicle trips during peak hours.

INTERSECTION ANALYSIS

Intersection analysis is not applicable in this case since the project has demonstrated that it will generate less than 100 vehicle trips during peak hours.

PROJECT ACCESS

Regional access to the project site is provided from Interstate 15 (I-15) through Third Street. The main pedestrian access is generally in the center of the building and will be from the south, nearest to the parking lot. From this access point, there are hallways reaching both the east and west ends of the building. Stairs to the second floor are also located at both the east and west ends of the building. Access to the second floor is from the north at Plaza Level leading into a lobby area with hallways reaching both east and west. The third floor has an atrium that is open from the second floor and a smaller lobby and hallways.

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CONCLUSION

The proposed LLRC project, located within the City of Norco involves replacing the existing Student Services building, and College Resource Center will with a new three-story, modern facility designed to fully support the needs of Norco College's existing faculty and students. The project aims to enhance the overall learning environment and improve the student learning experience. Since the project will serve the existing faculty and student population and is not anticipated to generate additional traffic, it qualifies for an exemption from preparing a Traffic Impact Analysis (TIA), as supported by the traffic assessment and technical information presented in this memorandum.

Should you have any questions, please feel free to contact me at:

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Attachment – Project Site Plan

INTEGRATED ENGINEERING GROUP
TRANSPORTATION PLANNING AND ENGINEERING

ATTACHMENT – Project Site Plan



1 CAMPUS PLOT PLAN

1" = 160'-0"

Issue Date: 05/17/2020

CAMPUS SITE PLAN

CANNONDESIGN

ALMA strategies

LIBRARY LEARNING RESOURCE CENTER & STUDENT SERVICES

RCCD RIVERSIDE COMMUNITY COLLEGE DISTRICT

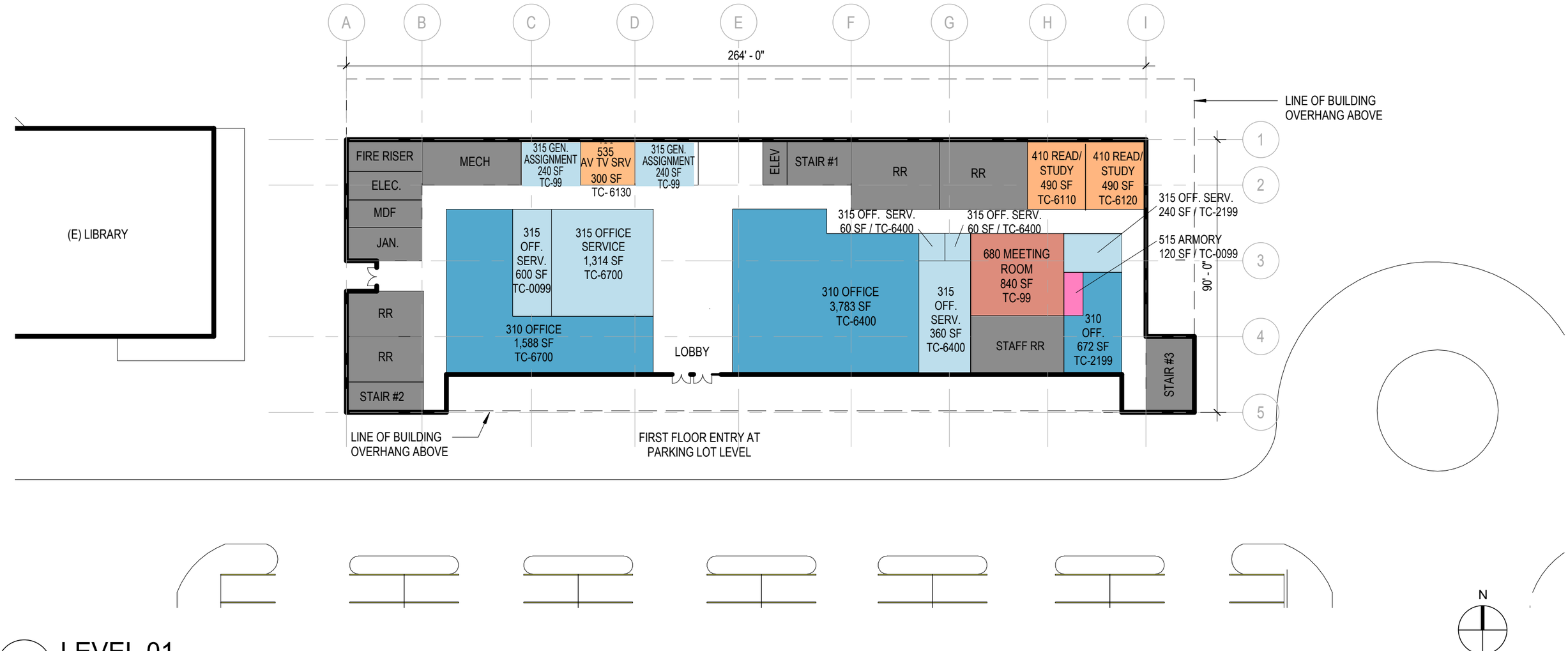
NORCO COLLEGE

LEVEL 01 PROGRAM

ROOM USE	TOP CODE	ASF
310 OFFICE	2199	672 SF
	6400	3783 SF
	6700	1,588 SF
315 OFFICE SERVICE	0099	1080 SF
	2199	240 SF
	6400	480 SF
	6700	1,314 SF

ROOM USE	TOP CODE	ASF
410 READ / STUDY ROOM	6110	490 SF
	6120	490 SF
515 ARMORY	2199	120 SF
535 AUDIO/VISUAL/TV	6130	300 SF
680 MEETING ROOM	0099	840 SF

LEVEL 01 TOTAL ASF	11,397 ASF
LEVEL 01 TOTAL GSF	21,038 GSF



1 LEVEL 01

1/32" = 1'-0"

Issue Date: 05/17/2020

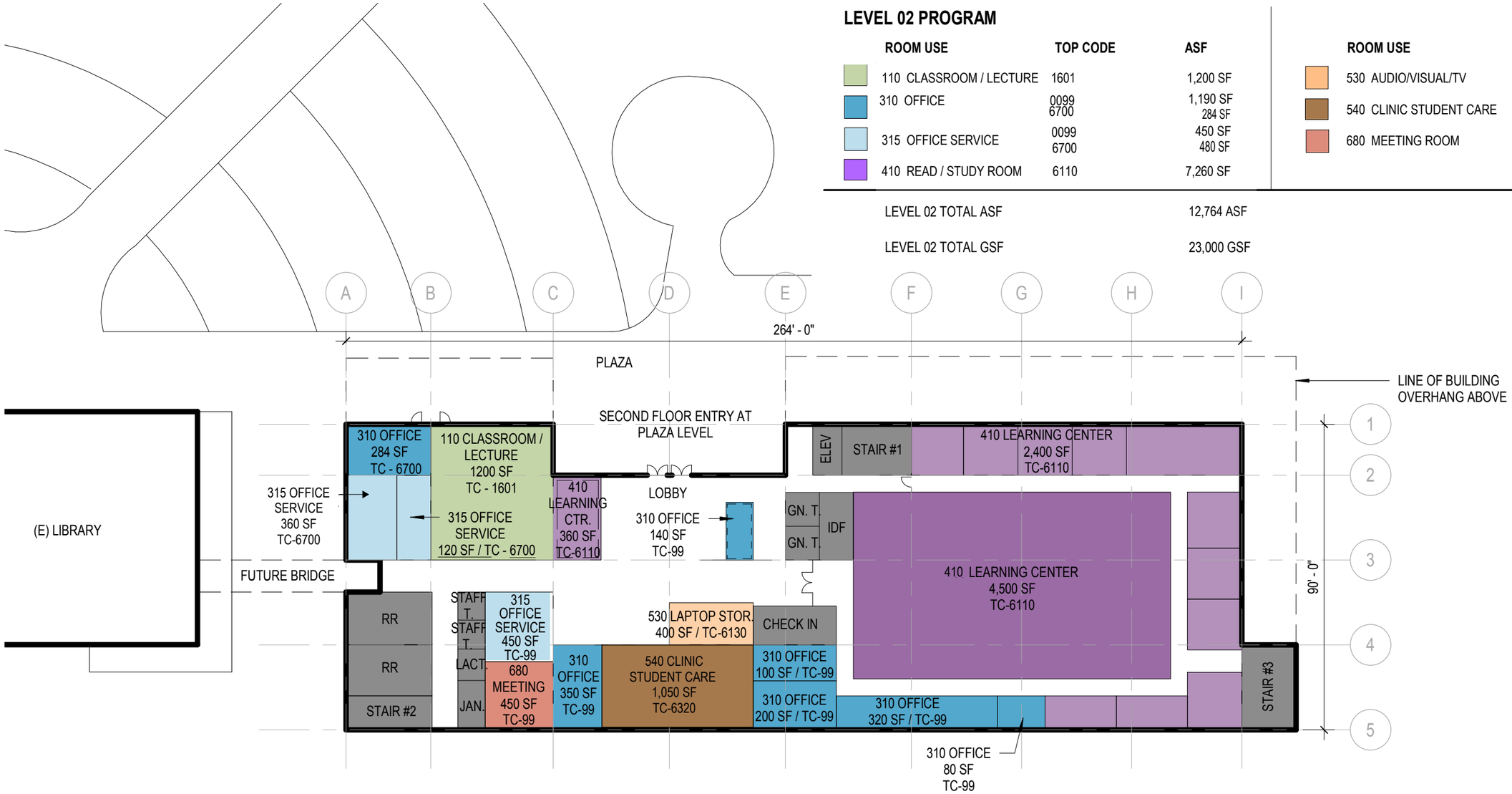
Level 01 Plan - A&R, FA, STUDENT SERVICES

LEVEL 02 PROGRAM

ROOM USE	TOP CODE	ASF
110 CLASSROOM / LECTURE	1601	1,200 SF
310 OFFICE	0099 6700	1,190 SF 284 SF
315 OFFICE SERVICE	0099 6700	450 SF 480 SF
410 READ / STUDY ROOM	6110	7,260 SF

ROOM USE	TOP CODE	ASF
530 AUDIO/VISUAL/TV	6130	400 SF
540 CLINIC STUDENT CARE	6320	1,050 SF
680 MEETING ROOM	0099	450 SF

LEVEL 02 TOTAL ASF	12,764 ASF
LEVEL 02 TOTAL GSF	23,000 GSF



1 LEVEL 02

1/32" = 1'-0"

Issue Date: 05/17/2020

Level 02 Plan - LRC, CRC

CANNONDESIGN

ALMA strategies

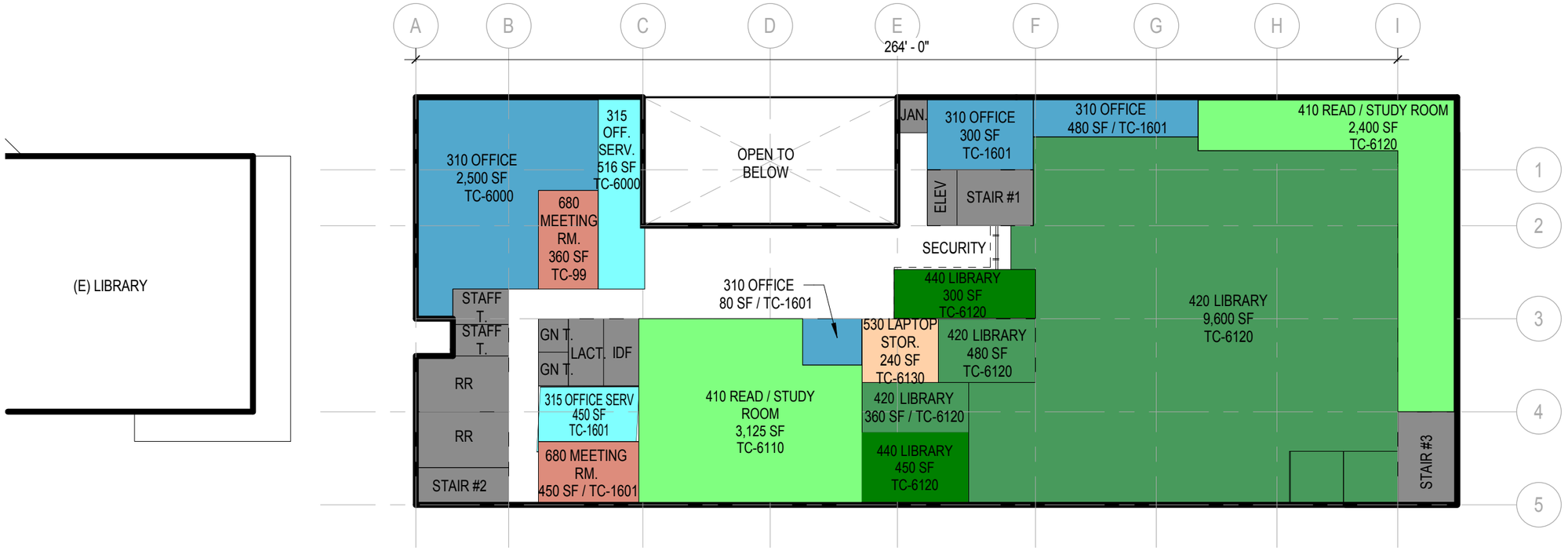
LIBRARY LEARNING RESOURCE CENTER & STUDENT SERVICES

RCCD RIVERSIDE COMMUNITY COLLEGE DISTRICT

NORCO COLLEGE

LEVEL 03 PROGRAM

ROOM USE	TOP CODE	ASF
310 OFFICE	1601 6000	860 SF 2,500 SF
315 OFFICE SERVICE	1601 6000	450 SF 516 SF
410 READ / STUDY ROOM	6110 6120	3,125 SF 2,400 SF
420 STACK	6120	10,440 SF
440 PROCESSING ROOM	6120	750 SF
530 AUDIO/VISUAL/TV	6130	240 SF
680 MEETING ROOM	0099 1601	360 SF 450 SF
LEVEL 03 TOTAL ASF		22,091 ASF
LEVEL 03 TOTAL GSF		27,701 GSF



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1 LEVEL 03

1/32" = 1'-0"

Issue Date: 05/17/2020

Level 03 Plan - LIBRARY, ADMIN

Appendix D:

Construction Noise Modeling Output

Receptor - Residences to the 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
DEMO									
Tractor	3	84	560	690	40	0	0.40	63.0	57.2
Dozer	1	82	560	690	40	0	0.40	61.0	55.2
Concrete Saw	1	90	560	690	20	0	0.20	69.0	60.2
							Log Sum	69.0	64.7
SITE PREP									
Grader	1	85	560	690	40	0	0.40	64.0	58.2
Dozer	1	82	560	690	40	0	0.40	61.0	55.2
Tractor	1	84	560	690	40	0	0.40	63.0	57.2
								64.0	61.8
GRADE									
Grader	1	85	560	690	40	0	0.40	64.0	58.2
Tractor	2	84	560	690	40	0	0.40	63.0	57.2
Dozer	1	82	560	690	40	0	0.40	61.0	55.2
								64.0	63.1
BUILD									
Crane	1	81	560	690	16	0	0.16	60.0	50.2
Man lift	1	75	560	690	20	0	0.20	54.0	45.2
Generator	1	81	560	690	50	0	0.50	60.0	55.2
Tractor	1	84	560	690	40	0	0.40	63.0	57.2
Welder/Torch	3	74	560	690	40	0	0.40	53.0	47.2
								63.0	60.6
ARCH COAT									
Compressor (air)	1	78	560	690	40	0	0.40	57.0	51.2
								57.0	51.2
TRENCHING									
Slurry Trenching Machine	1	80	200	350	50	0	0.50	68.0	60.1
								68.0	60.1

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

Appendix E:

Construction Vibration Modeling Output

VIBRATION LEVEL IMPACT

Project:	Library Student Services RCCD Noise	Date: 11/17/25
Source:	Large Bulldozer	
Scenario:	Unmitigated	
Location:	Southwest residential building	
Address:	Norco College, Norco, CA	

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

DATA INPUT

Equipment = Type	2	Large Bulldozer	INPUT SECTION IN BLUE
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	330.00	Distance from Equipment to Receiver (ft)	
n =	1.10	Vibration attenuation rate through the ground	

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

DATA OUT RESULTS

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