APPENDIX D

Noise and Vibration Technical Report

Yucca Valley Dutch Bros Project
Noise & Vibration Technical Report

November 2025

Prepared for:

Town of Yucca Valley
57090 Twentynine Palms Highway
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TABLE OF CONTENTS

Section Page

1.0 Introduction 1
- 1.1 Project Location 1
- 1.2 Existing Site Zoning And Land Use Designations 1
- 1.3 Project Characteristics 2

2.0 Environmental Setting 7
- 2.1 Fundamentals of Noise 7
- 2.2 Noise Sensitive Receptors 11
- 2.3 Existing Conditions 14

3.0 Regulatory Framework 15
- 3.1 Regulatory Framework 15

4.0 Noise Analysis 21
- 4.1 Thresholds of Significance 21
- 4.2 Methodology 21
- 4.3 Impact Analysis 22

5.0 References 27

Appendix

A Noise & Vibration Data

LIST OF TABLES

Table Page

1 A-Weighted Decibel Scale 8
2 Building Noise Reduction Factors 9
3 Existing Noise Levels in the Vicinity of the Project Site 14
4 Construction Vibration Damage Criteria 18
5 Land Use Compatibility for Community Noise Environments 20
6 Estimated Exterior Construction Noise 23
7 Vibration Levels at Off-Site Structures from Project Construction 29

LIST OF FIGURES

Figure Page

1 Regional Vicinity 3
2 Aerial Photograph of Project Site 4
3 Conceptual Site Plan 5
4 Noise Monitoring and Sensitive Receptor Location Map. 13

1.0 INTRODUCTION

This Noise & Vibration Technical Report describes the potential for noise and vibration impacts resulting from implementation of the proposed Dutch Bros coffee shop location at 58121 Twentynine Palms Highway (Project) in the Town of Yucca Valley (Town). This report includes an evaluation of potential impacts associated with changes in ambient noise levels in the vicinity of the Project Site due to excessive noise; and whether exposure is in excess of standards established in the Town's General Plan or Noise Ordinance. This report has been prepared by Impact Sciences, Inc., in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA).

1.1 PROJECT LOCATION

The Project Site is located at 58121 Twentynine Palms Highway (State Route 62) in the Town of Yucca Valley, San Bernardino County, California (Assessor's Parcel Number [APN] 0601-416-05). The Project Site encompasses approximately 1.01 gross acres (44,190 square feet) and is situated along the south side of Twentynine Palms Highway, the primary east-west transportation corridor through the Morongo Basin. **Figure 1, Regional Vicinity**, illustrates the site's location in a regional context.

The Project Site is currently vacant and undeveloped, except for an existing paved drive aisle at the northern portion of the site that connects two adjacent commercial developments. The topography of the site is generally flat, with no significant slopes, drainage channels, or geologic features. The site supports native desert vegetation, including Western Joshua Trees (*Yucca brevifolia*), which are protected under the California Endangered Species Act. Portions of the site also show evidence of disturbance from illegal off-road vehicle use. **Figure 2, Aerial Photograph of the Project Site**, shows an aerial photograph of the existing Project Site and surroundings.

1.2 PROJECT DESCRIPTION

Project Overview

The Project proposes the construction and operation of an approximately 1,025-square-foot Dutch Bros Coffee shop with a dual-lane drive-through facility and associated site improvements. The drive-through is designed to accommodate 23 queued vehicles. In addition to on-site improvements, the Project would contribute in-lieu fees toward off-site roadway improvements consistent with the Town's circulation plans, specifically, the widening of Twentynine Palms Highway to an ultimate half-width of 67 feet along the Project frontage. The future widening of Twentynine Palms Highway would be undertaken at a later date

by the Town of Yucca Valley Public Works/Engineering Department and the San Bernardino County Transportation Authority. **Figure 3, Conceptual Site Plan**, illustrates the Project's proposed site plan.

Operation

Operation of the Project would entail a drive-through-focused quick-service coffee shop with limited walk-up service and no indoor seating. Land uses, such as the Project, are conditionally permitted in the C-MU zone. The Project is anticipated to operate daily between the hours of 5:00 AM and 11:00 PM. The Project is expected to employ approximately 24 to 32 people, with 6 to 8 employees working per shift. Supply deliveries would occur via small box trucks during off-peak hours.

SOURCE: Esri, 2025

FIGURE **1**

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Regional Vicinity

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SOURCE: Esri, 2025

FIGURE **2**

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Aerial Photograph of the Project Site

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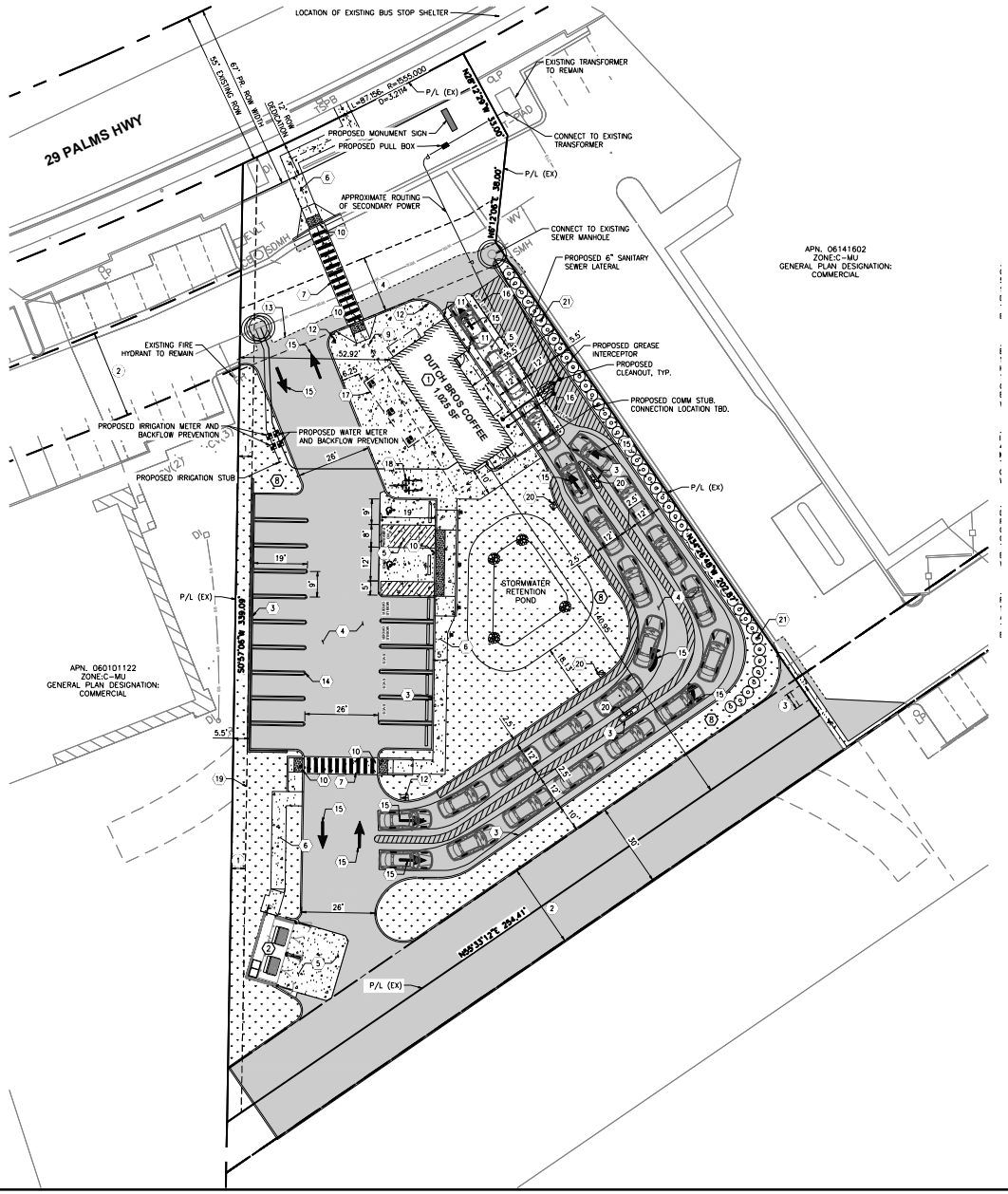

SOURCE: Barghausen Consulting Engineers, LLC., 2025

FIGURE 3

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Conceptual Site Plan

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Access and Circulation

Site access would be provided from two existing driveways that currently serve adjacent commercial developments. One driveway is located along Twentynine Palms Highway and provides access to the Big 5 Sporting Goods store to the west, while the second driveway is located along Balsa Avenue in proximity to the Walgreens store to the east. Project customers and employees would enter the Project Site from the existing internal drive aisle that connects the two commercial developments and integrate circulation with the surrounding uses. In addition, the Project would include a new drive aisle along the southern perimeter of the Project Site providing direct access to the Project Site from the existing surface parking lot of the Walgreens to the east.

Internal circulation would allow vehicles to either park in the designated parking area or enter the drive-through lanes, which wrap around the southern portion of the site and direct vehicles northward to exit into adjacent parking lots and back to surrounding roadways. The Project would provide a total of 18 parking spaces (3 future electric vehicle charging stations [EVCS], 1 accessible EVCS, 1 accessible, 13 standard).

Landscaping

The Project would incorporate approximately 10,350 square feet of landscaping and would retain 2,808 square feet of existing landscaping near Twentynine Palms Highway. The landscape design emphasizes drought-tolerant, desert-appropriate plantings consistent with the Town's Water Efficient Landscape Ordinance and the Water Use Classification of Landscape Species (WUCOLS) guidelines.

Proposed trees include Swan Hill fruitless olive and Mexican palo verde, which can reach mature size of approximately 25 feet in height and width. Shrub and accent plantings would include desert agave, purple threeawn, grey desert spoon, California buckwheat, Texas sage, deer grass, and jojoba. Texas sage would be installed at a height of approximately 36 inches at the time of planting to provide immediate screening and visual structure along the eastern property line specifically to screen car headlights, and shrubs would be used to screen the trash enclosure.

Groundcover treatments would consist of approximately 1,498 square feet of decorative local cobble placed over landscape fabric. This treatment would provide a low-maintenance, water-efficient groundcover for a desert climate.

1.3 PROJECT CONSTRUCTION SEQUENCING

For the purpose of evaluating potential environmental impacts, this report assumes that construction of the Project would begin in 2026 and extend over a period of approximately five (5) months following issuance of the Incidental Take Permit for the removal of the Western Joshua Trees, with full operation anticipated in 2026. This schedule is considered conservative and is intended to capture the maximum potential daily impacts associated with construction activities.

Construction would occur in three primary stages: (1) debris removal, (2) grading and foundation preparation, and (3) building construction. All equipment and construction staging would occur within the boundaries of the Project Site. The grading plan for the Project anticipates approximately 1,000 cubic yards of cut and 200 cubic yards of fill, resulting in a net export of approximately 800 cubic yards of soil.

Debris removal stage would involve clearing the site and preparing it for grading, which would then be immediately followed by grading and foundation preparation. Debris removal and grading/foundation stages are expected to last approximately five (5) weeks. This stage would establish building pads, prepare utility connections, and level the site. The building construction stage would then proceed over approximately four (4) months and would include construction of the coffee shop structure, installation of utilities, application of architectural coatings, and paving the Project Site. Architectural coating and paving activities are expected to occur during the final month of the construction stage.

Consistent with the assumptions included within the California Emissions Estimator Model (CalEEMod), the following maximum daily equipment by stage will be assumed.

- Debris removal: 1 concrete industrial saw, 1 rubber tired dozer, 2 tractors/loader/backhoes
- Grading: 1 grader, 1 rubber tired dozer, 1 tractor/loader/backhoe
- Building Construction: 1 crane, 2 forklifts, 2 tractors/loaders/backhoes
- Paving: 4 cement and mortar mixer, 1 paver, 1 roller, 1 tractor/loader/backhoe
- Architectural Coating: 1 air compressor

2.0 ENVIRONMENTAL SETTING

2.1 FUNDAMENTALS OF NOISE & VIBRATION

Noise

Noise is usually defined as unwanted sound that is an undesirable byproduct of society's normal day-to-day activities. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, and/or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). The human ear does not respond uniformly to sounds at all frequencies. For example, the human ear is less sensitive to low and high frequencies than medium frequencies, which more closely correspond with human speech. In response to the sensitivity of the human ear to different frequencies, the A-weighted noise level (or scale), which corresponds better with people's subjective judgment of sound levels, has been developed. This A-weighted sound level, referenced in units of dB(A), is measured on a logarithmic scale such that a doubling of sound energy results in a 3 dB(A) increase in noise level. Typically, changes in a community noise level of less than 3 dB(A) are not noticed by the human ear.[1] Changes from 3 to 5 dB(A) may be noticed by some individuals who are sensitive to changes in noise. A greater than 5 dB(A) increase is readily noticeable, while the human ear perceives a 10 dB(A) increase in sound level to be a doubling of sound.

On the A-weighted scale, the range of human hearing extends from approximately 3 to 140 dB(A). **Table 1, A-Weighted Decibel Scale**, provides examples of A-weighted noise levels from common sources. Noise sources occur in two forms: (1) point sources, such as stationary equipment or individual motor vehicles; and (2) line sources, such as a roadway with a large number of point sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dB(A) for each doubling of distance from the source to the receptor at acoustically "hard" sites and 7.5 dB(A) at acoustically "soft" sites.[2] For example, if a noise source produces a noise level of 89 dB(A) at a reference distance of 50 feet, the noise level would be 83 dB(A) at a distance of 100 feet from the noise source, 77 dB(A) at a distance of 200 feet, and so on. Noise generated by a mobile source will decrease by approximately 3 dB(A) over hard surfaces and 4.5 dB(A) over soft surfaces for each doubling of distance.

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1 California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf

2 Federal Highway Administration, *Highway Noise Fundamentals*, (1980) 97. Examples of "hard" or reflective sites include asphalt, concrete, and hard and sparsely vegetated soils. Examples of acoustically "soft" or absorptive sites include soft, sand, plowed farmland, grass, crops, heavy ground cover, etc.

Table 1
A-Weighted Decibel Scale

Typical A-Weighted Sound Levels	Sound Level (dB(A), Leq)
Threshold of Pain	140
Jet Takeoff at 100 Meters	125
Jackhammer at 15 Meters	95
Heavy Diesel Truck at 15 Meters	85
Conversation at 1 Meter	60
Soft Whisper at 2 Meters	35

Source: United States Occupational Safety & Health Administration, Noise and Hearing Conservation Technical Manual, 1999.

Sound levels also can be attenuated by man-made or natural barriers (e.g., sound walls, berms, and ridges), as well as elevational differences. Noise is most audible when traveling by direct line-of-sight, an interrupted visual path between the noise source and noise receptor. Barriers, such as walls or buildings that break the line-of-sight between the source and the receiver, can greatly reduce noise levels from the source since sound can only reach the receiver by diffraction. However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Solid walls and berms may reduce noise levels by 5 to 10 dB(A) depending on their height and distance relative to the noise source and the noise receptor.[3] Sound levels may also be attenuated 3 dB(A) by a first row of houses and 1.5 dB(A) for each additional row of houses.[4] The minimum noise attenuation provided by typical structures in California is provided in **Table 2, Building Noise Reduction Factors**.

3 Federal Highway Administration, *Highway Noise Mitigation*, (1980) 18.

4 California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf

Table 2
Building Noise Reduction Factors

Building Type	Window Condition	Noise Reduction Due to Exterior of the Structure (dB(A))
All	Open	10
Light Frame	Ordinary Sash (closed)	20
	Storm Windows	25
Masonry	Single Glazed	25
	Double Glazed	35

Source: Federal Highway Administration, Highway Traffic Noise: Analysis and Abatement Guidance. December 2011.

Sound Rating Scales

Various rating scales approximate the human subjective assessment to the "loudness" or "noisiness" of a sound. Noise metrics have been developed to account for additional parameters, such as duration and cumulative effect of multiple events. Noise metrics are categorized as single event metrics and cumulative metrics, as summarized below.

In order to simplify the measurement and computation of sound loudness levels, frequency weighted networks have obtained wide acceptance. The A-weighted scale, discussed above, has become the most prominent of these scales and is widely used in community noise analysis. Its advantages are that it has shown good correlation with community response and is easily measured. The metrics used in this analysis are all based upon the dB(A) scale.

Equivalent Noise Level

Equivalent Noise Level (Leq) is the sound level corresponding to a steady-state A-weighted sound level containing the same total energy as several single event noise exposure level events during a given sample period. Leq is the "acoustic energy" average noise level during the period of the sample. It is based on the observation that the potential for noise annoyance is dependent on the total acoustical energy content of the noise. The equivalent noise level is expressed in units of dB(A). Leq can be measured for any period, but is typically measured for 15 minutes, 1 hour, or 24 hours. Leq for a 1-hour period is used by the Federal Highway Administration (FHWA) for assessing highway noise impacts. Leq for 1 hour is referred to as the Hourly Noise Level (HNL) in the California Airport Noise Regulations and is used to develop Community

Noise Equivalent Level values for aircraft operations. Construction noise levels and ambient noise measurements in this section use the Leq scale.

Community Noise Equivalent Level

Community Noise Equivalent Level (CNEL) is a 24-hour, time-weighted energy average noise level based on the A-weighted decibel. It is a measure of the overall noise experienced during an entire day. The term "time-weighted" refers to the penalties attached to noise events occurring during certain sensitive periods. In the CNEL scale, 5 decibels (dB) are added to measured noise levels occurring between the hours of 7 P.M. and 10 P.M. For measured noise levels occurring between the hours of 10 P.M. and 7 A.M., 10 dB are added. These decibel adjustments are an attempt to account for the higher sensitivity to noise in the evening and nighttime hours and the expected lower ambient noise levels during these periods. Existing and projected future traffic noise levels in this section use the CNEL scale.

Day-Night Average Noise Level

The day-night average sound level (Ldn) is another average noise level over a 24-hour period. Noise levels occurring between the hours of 10 P.M. and 7 A.M. are increased by 10 dB. This noise is weighted to take into account the decrease in community background noise of 10 dB(A) during this period. Noise levels measured using the Ldn scale are typically similar to CNEL measurements.

Adverse Effects of Noise Exposure

Noise is known to have several adverse effects on humans, which has led to laws and standards being set to protect public health and safety, and to ensure compatibility between land uses and activities. Adverse effects of noise on people include hearing loss, communication interference, sleep interference, physiological responses, and annoyance. Each of these potential noise impacts on people is briefly discussed in the following narrative.

Hearing Loss

Hearing loss is generally not a community noise concern, even near a major airport or a major freeway. The potential for noise-induced hearing loss is more commonly associated with occupational noise exposures in heavy industry, very noisy work environments with long-term exposure, or certain very loud recreational activities (e.g., target shooting and motorcycle or car racing). The Occupational Safety and Health Administration (OSHA) identifies a noise exposure limit of 90 dB(A) for 8 hours per day to protect from hearing loss (higher limits are allowed for shorter duration exposures). Noise levels in neighborhoods, even in very noisy neighborhoods, are not sufficiently loud enough to cause hearing loss.

Communication Interference

Communication interference is one of the primary concerns in environmental noise. Communication interference includes speech disturbance and intrusion with activities such as watching television. Noise can also interfere with communications such as within school classrooms. Normal conversational speech is in the range of 60 to 65 dB(A) and any noise in this range or louder may interfere with speech.

Sleep Interference

Noise can make it difficult to fall asleep, create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and cause awakening. Noise may even cause awakening that a person may or may not be able to recall.

Physiological Responses

Physiological responses are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, and other physical changes. Studies to determine whether exposure to high noise levels can adversely affect human health have concluded that, while a relationship between noise and health effects seems plausible, there is no empirical evidence of the relationship.

Annoyance

Annoyance is an individual characteristic and can vary widely from person to person. Noise that one person considers tolerable can be unbearable to another of equal hearing capability. The level of annoyance depends both on the characteristics of the noise (including loudness, frequency, time, and duration), and how much activity interference (such as speech interference and sleep interference) results from the noise. However, the level of annoyance is also a function of the attitude of the receiver. Attitudes may also be affected by the relationship between the person affected and the source of noise, and whether attempts have been made to abate the noise.

Vibration

Vibration consists of waves transmitted through solid material. Groundborne vibration propagates from a source through the ground to adjacent buildings by surface waves. Vibration may comprise a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating and is measured in hertz (Hz). Most environmental vibrations consist of a composite, or “spectrum” of many frequencies, and are generally classified as broadband or random vibrations. The normal frequency range of most groundborne vibration that can be felt generally starts from a low frequency of less than one Hz to a high of about 200 Hz. Vibration is often measured in terms of the peak

particle velocity (PPV) in inches per second (in/sec) when considering impacts on buildings or other structures, as PPV represents the maximum instantaneous peak of vibration that can stress buildings. Because it is a representation of acute vibration, PPV is often used to measure the temporary impacts of short-term construction activities that could instantaneously damage-built structures. Vibration is often also measured by the root mean squared (RMS) because it best correlates with human perception and response. Specifically, RMS represents "smoothed" vibration levels over an extended period of time and is often used to gauge the long-term chronic impact of a Project's operation on the adjacent environment. RMS amplitude is the average of a signal's squared amplitude. It is most commonly measured in decibel notation (VdB).

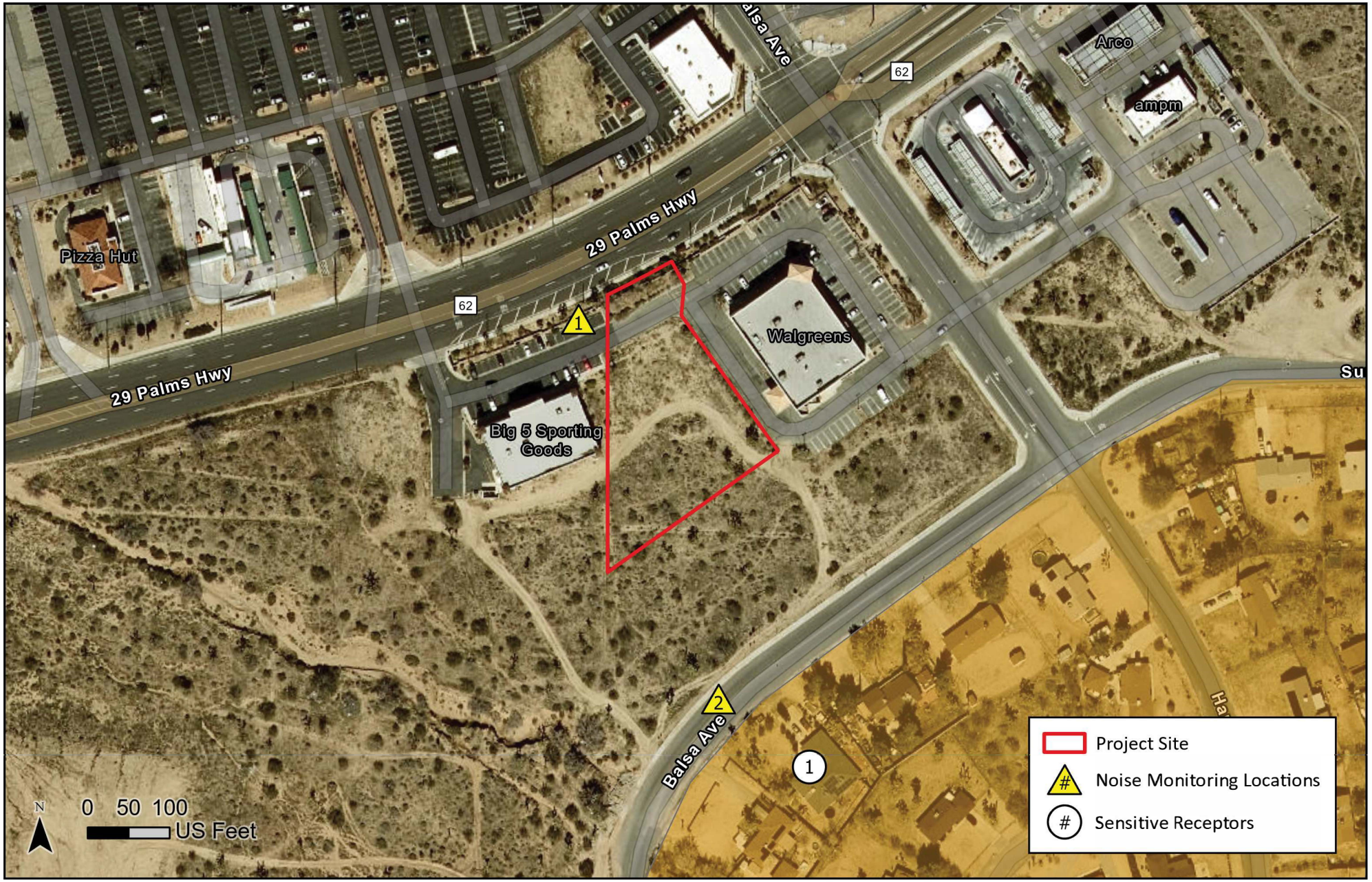
Vibration energy attenuates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High frequency vibrations reduce much more rapidly than low frequencies, so that in the far-field from a source, the low frequencies tend to dominate. Soil properties also affect the propagation of vibration. When groundborne vibration interacts with a building, there is usually a ground-to-foundation coupling loss (i.e., the foundation of the structure does not move in sync with the ground vibration), but the vibration can also be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows or items on shelves, or the motion of building surfaces. At high levels, vibration can result in damage to structures.

Manmade groundborne vibration is generally limited to areas within a few hundred feet of certain types of construction activities, especially pile driving. Road vehicles rarely create enough groundborne vibration to be perceptible to humans unless the road surface is poorly maintained and there are potholes or bumps. If traffic induces perceptible vibration in buildings, such as window rattling or shaking of small loose items (typically caused by heavy trucks in passing), then it is most likely an effect of low-frequency airborne noise or ground characteristics. Human annoyance by vibration is related to the number and duration of events. The more events or the greater the duration, the more annoying it will be to humans.

2.2 NOISE SENSITIVE RECEPTORS

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The closest noise-sensitive receptors to the Project Site are the single-

family residences 228 feet to the south of the Project Site. See **Figure 4, Noise Monitoring and Sensitive Receptor Location Map.**



SOURCE: Esri, 2025

FIGURE **4**

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Noise Monitoring and Sensitive Receptor Location Map

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2.3 EXISTING CONDITIONS

Measured Ambient Noise Levels

To establish baseline noise conditions, existing noise levels were monitored at four locations in the vicinity of the Project Site. The locations of where the noise measurements were taken are depicted in **Figure 4, Noise Monitoring and Sensitive Receptor Location Map**. The noise survey was conducted in October 2025 using the Larson Davis Sound Expert 821 (Type 1) sound level meter, which conforms to industry standards set forth in ANSI S1.4-1983 (R2006) – Specification for Sound Level Meters/Type 1. This instrument was calibrated and operated according to the manufacturer's written specifications. At the measurement sites, the microphone was placed at a height of approximately five feet above grade. The results of the measurements are summarized in **Table 3, Existing Noise Levels in the Vicinity of the Project Site**. As shown in **Table 3**, the ambient daytime noise levels ranged from 48.8 dB(A) Leq to 54.9 dB(A) Leq in the vicinity the Project Site. The existing ambient day-night noise level on the Project Site fronting Twenty-Nine Palms Highway (Noise Monitoring Location 1) is estimated to be 60.8 dB(A) Ldn. The existing ambient day-night noise level at the residences to the south (Noise Monitoring Location 2) is estimated to be 56.9 dB(A) Ldn. See **Appendix A** to this report.

Table 3
Existing Noise Levels in the Vicinity of the Project Site

Noise Monitoring Locations	Primary Noise Sources	Noise Levels [dB(A)]		
		Leq	Lmin	Lmax
Daytime (7AM – 10 PM)				
1. Project Site	Vehicle Traffic, Parking Lot Activity	54.9	46.5	67.9
2. Residences to the south	Vehicle Traffic, Neighborhood Activity	48.8	38.8	68.3
Night (10 PM – 7AM)				
1. Project Site	Vehicle Traffic	54.3	48.0	64.1
2. Residences to the south	Vehicle Traffic, Neighborhood Activity	50.7	42.1	65.6

*Source: Impact Sciences, Inc., October 2025 See **Appendix A, Noise Data**. As shown therein, 15-minute Leq data was collected for all locations.*

3.0 REGULATORY FRAMEWORK

3.1 REGULATORY FRAMEWORK

There are several plans, regulations, and programs that include policies, requirements, and guidelines regarding noise at the federal, state, regional, and local levels. As described below, these plans, guidelines, and laws include the following:

- Occupational Safety and Health Act of 1970
- Noise Control Act of 1972
- Office of Planning and Research Guidelines for Noise Compatible Land Use
- Town of Yucca Valley General Plan
- Town of Yucca Valley Municipal Code

Federal

Occupational Safety and Health Act of 1970

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §1919 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.[5]

Noise Control Act of 1972

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (U.S. EPA) established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations (CFR) that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, U.S. EPA issued guidance levels for the protection of public health and welfare in residential areas of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA. These guidance levels are not standards or regulations and were developed without consideration of technical or economic feasibility. There are no federal noise standards

5 United States Department of Labor. OSH Act of 1970. https://www.osha.gov/laws-regs/oshact/completeoshact. Accessed November 5, 2025.

that directly regulate environmental noise related to the construction or operation of the Project. Moreover, the federal noise standards are not reflective of urban environments that range by land use, density, proximity to commercial or industrial centers, etc. As such, for purposes of determining acceptable sound levels to determine and evaluate intrusive noise sources and increases, this document utilizes the Town of Yucca Valley Noise Regulations, discussed below.

Federal Transit Administration Vibration Standards

There are no federal vibration standards or regulations adopted by any agency that are applicable to evaluating vibration impacts from activities associated with the Project. However, the Federal Transit Administration (FTA) has adopted vibration criteria for use in evaluating vibration impacts from construction activities. The vibration damage criteria adopted by the FTA are shown in **Table 4, Construction Vibration Damage Criteria.**

Table 4
Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA, Transit Noise and Vibration Impact Assessment Manual, 2018.

State

Office of Planning and Research Guidelines for Noise Compatible Land Use

The State of California has not adopted statewide standards for environmental noise, but the Governor's Office of Planning and Research (OPR) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The Town has developed its own compatibility guidelines in the Noise Element of the General Plan based in part on OPR Guidelines, see **Table 5, Land Use Compatibility for Community Noise Environments** later in this report. California Government Code Section 65302 requires each county and city or town in the State to prepare and adopt a comprehensive long-range general plan for its physical development, with Section 65302(f) requiring a noise element to be included in the general plan. The noise element must: (1) identify and appraise noise

problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

Local

Yucca Valley General Plan

The Town of Yucca Valley General Plan (General Plan) contains a Noise Element outlining the Town's policies and programs aiming to achieve and maintain noise levels compatible with various types of land uses. The noise goals and policies from the General Plan that are relevant to the Project are listed below:

Goal N1 A noise environment where excessive noise from stationary, transportation-related, and temporary sources of noise are appropriately managed.

Policy N 1-1: Separate excessive noise-generating uses from residential uses and other sensitive receptors through building design and noise-minimizing buffers such as landscaping, berms, and setbacks.

Policy N 1-2: Require noise-reducing site design and building construction in residential and mixed-use projects in areas with outdoor CNEL levels in excess of 65 dBA.

Policy N 1-3: Require daytime only truck deliveries to commercial and industrial uses adjacent to residential uses and other sensitive receptors unless there is no feasible alternative.

Policy N 1-15: Require the design and construction of industrial and commercial development to minimize excessive offsite noise impacts to surrounding properties.

The General Plan also includes **Table 5 Land Use Compatibility for Community Noise Environments**, presented below, which shows a land use compatibility chart for community noise prepared by the California Office of Noise Control. It identifies "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" exterior noise levels for various land uses. A "conditionally acceptable" designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a "normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements.

Yucca Valley Municipal Code

The Town has jurisdiction over noise and vibration regulation, as stated in the Town's Municipal Code, Section 9.34 Noise. Section 9.34 establishes standards concerning acceptable noise and vibration levels for both sensitive land uses and for noise generating land uses. Section 9.34 states the following:

Noise Standards For Stationary Noise Sources: "Noise Standards For Stationary Noise Sources", of this section describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

Affected Land Uses	7:00 A.M. To 10:00 P.M. Leq	10:00 P.M. To 7:00 A.M. Leq
Residential	55 dB(A)	45 dB(A)
Professional services	55 dB(A)	55 dB(A)
Other commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)

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:

a. The noise standard for the receiving land use as specified in subsection B, "Noise Impacted Areas", of this section, for a cumulative period of more than thirty (30) minutes in any hour.

b. The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour.

c. The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour.

d. The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one minute in any hour.

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

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 below.

Categories	Uses	Ldn (Or CNEL) dB(A)	
		Interior	Exterior
Residential	Single-family, multi-family, duplex, mobile homes	45	60
Commercial	Amphitheater, concert hall, auditorium, movie theater	45	n/a
	Commercial retail, bank, restaurant	50	n/a
	Hotel, motel, transient housing	45	60
	Office building, research and development, professional offices	45	65
Institutional/public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open space	Park	n/a	65

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.

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 seven o'clock (7:00) A.M. and ten o'clock (10:00) P.M., except Sundays and federal holidays.

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.

Exempt Vibrations: The following sources of vibration shall be exempt from the regulations of this section:

- Motor vehicles not under the control of the subject use.

- Temporary construction maintenance or demolition activities between seven o'clock (7:00) A.M. and ten o'clock (10:00) P.M. (Ord. 254, 12-16-2014)

Table 5
Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (dB, L_{dn} or CNEL)						
	55	60	65	70	75	80	
Residential - Low Density Single-Family, Duplex, Mobile Homes							
Residential - Multi-Family							
Transient Lodging - Motels Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

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

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice.

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

Clearly Unacceptable - New construction or development should generally not be undertaken.

Source: California Office of Planning and Research, General Plan Guidelines (2003), Appendix D.; Town of Yucca Valley General Plan Noise Element

4.0 NOISEANALYSIS

4.1 THRESHOLDS OF SIGNIFICANCE

The impacts of the Project related to noise would be considered significant if they would exceed any of the following Thresholds of Significance, in accordance with Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project Site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive ground-borne vibration or ground-borne noise levels; and
- 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 *State CEQA Guidelines* do not define the levels at which groundborne vibration or groundborne noises are considered "excessive." Thus, in terms of construction-related vibration impacts on buildings, the adopted guidelines and recommendations by the FTA to limit groundborne vibration based on the age and/or condition of the structures that are located in close proximity to construction activity are used in this analysis to evaluate potential groundborne vibration impacts. Based on the FTA criteria, construction impacts relative to groundborne vibration would be considered significant if the following were to occur:

- Project construction activities would cause a PPV groundborne vibration level to exceed 0.5 inches per second at any building that is constructed with reinforced-concrete, steel, or timber;
- Project construction activities would cause a PPV groundborne vibration level to exceed 0.3 inches per second at any engineered concrete and masonry buildings;
- Project construction activities would cause a PPV groundborne vibration level to exceed 0.2 inches per second at any non-engineered timber and masonry buildings; or
- Project construction activities would cause a PPV ground-borne vibration level to exceed 0.12 inches per second at any historical building or building that is extremely susceptible to vibration damage.

The *State CEQA Guidelines* do not define the levels at which noise would be considered substantial increases. Thus, for purposes of this analysis, the Project would normally have a significant impact on noise

levels from project operations if the project causes the ambient noise level measured at the property line of affected uses to increase by 3 dB(A) if the total ambient noise levels without the Project exceed the Town's General Plan exterior noise standards, or any 5 dB(A) or greater noise increase when total ambient noise levels without the Project are within the Town's exterior noise standards.

4.2 METHODOLOGY

Noise levels associated with Project-related construction activities were calculated using the FHWA Roadway Construction Noise Model (RCNM). Noise levels were also compared to the Town's noise ordinance, which includes provisions regarding construction noise levels. Specifically, YVMC Section 9.34 prohibits construction activity except within the hours of 7:00 a.m. and 10:00 p.m. As the Project would comply with the daytime construction hours established in the YVMC, this analysis also uses the FTA's general construction noise criteria of 90 dB(A) Leq (1-hour)[6] to provide additional context for the Project's potential to generate daytime construction noise impacts.

An analysis of traffic noise was conducted to determine if the Project would have a perceptible increase in traffic-related noise. Studies have shown that a 3 dB(A) increase in sound level pressure is barely detectable by the human ear. A 3 dB(A) increase in roadway noise levels requires an approximate doubling of roadway traffic volume, assuming that travel speeds and fleet mix remain constant.[7]

The Project's potential to result in significant noise impacts from on-site operational noise sources was assessed by identifying sources of on-site noise sources and considering the impact that they could produce given the nature of the source (i.e., loudness and whether noise would be produced during daytime or more-sensitive nighttime hours), distances to nearby sensitive receptors, surrounding ambient noise levels, the presence of similar noise sources in the vicinity, and maximum allowable noise levels permitted by the YVMC.

4.3 IMPACT ANALYSIS

Impact NOI-1 **Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of**

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6 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-2 (General Assessment Construction Noise Criteria), September 2018.

7 California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, 2013. Available online at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf

standards established in the local general plan or noise ordinance, or applicable standards of other agencies? ***(Less than Significant).***

Construction Impacts

Construction of the Project would require the use of heavy equipment during grading/site preparation, installation of utilities, building fabrication, and finishing. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of construction, several types of equipment potentially could be operating concurrently, and noise levels would vary based on the amount of equipment in operation and the location of the activity. The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) has compiled data regarding the noise-generating characteristics of specific types of construction equipment and typical construction activities.

With the use of the RCNM, as detailed in **Appendix A** to this report,[8] the construction noise levels forecasted for the sensitive receptors are presented in **Table 6, Estimated Exterior Construction Noise at Sensitive Receptors.** Noise levels would diminish notably with distance from the construction site at a rate of 6 dB(A) per doubling of distance (noise from stationary or point sources is reduced by about 6 dB(A) for every doubling of distance at acoustically hard locations). For example, a noise level of 86 dB(A) Leq measured at 50 feet from the noise source to the receptor would decline to 80 dB(A) Leq at 100 feet from the source to the receptor and fall by another 6 dB(A) Leq to 74 dB(A) Leq at 200 feet from the source to the receptor. These noise attenuation rates assume a flat and unobstructed distance between the noise generator and the receptor. Furthermore, it should be noted that increases in noise levels at sensitive receptors during construction would be intermittent and temporary and would not generate continuously high noise levels. In addition, the construction noise experienced at sensitive receptors during the initial periods of construction (i.e., site preparation/grading/foundations) typically would be reduced in the later construction periods (i.e., interior building construction).

8 Project construction noise levels were calculated based on the Project's anticipated mix of construction equipment with the FHWA RCNM Version 1.1.

Table 6
Estimated Exterior Construction Noise at Sensitive Receptors

Sensitive Land Uses [a]	Distance to Project Site (feet)	Estimated Construction Noise Levels [dB(A) Leq]	Exceed FTA 90 dB(A) 1-Hour Leq Criteria?
Debris Removal			
1. Residences to the south	228	67.2	No
Grading			
1. Residences to the south	228	66.2	No
Building Construction			
1. Residences to the south	228	63.7	No

[a] *See **Figure 4** for locations of sensitive receptors.*
[b] *While the project would include construction activities up to the adjacent property lines, consistent with FTA methodology, these calculations are based on distances from the center of the site to the receptors.*
*See **Appendix A** to this report.*

Temporary construction, maintenance, and repair activities are exempt from the YVMC regulations regarding noise so long as the temporary construction does not take place between the hours of 10:00 p.m. and 7:00 a.m.[9] As the Project would comply with the daytime construction hours established in the YVMC, this analysis also uses the FTA's general construction noise criteria of 90 dB(A) Leq (1-hour) to provide additional context for the Project's potential to generate daytime construction noise impacts. While construction activity would increase noise levels in the vicinity of the Project Site (see **Table 6)**, the Project's construction activities would generally not exceed the FTA's general construction noise criteria of 90 dB(A) Leq (1-hour) at any sensitive receptors. Furthermore, Project construction would not occur during restricted periods, and thus, the Project would be consistent with the criteria set forth in the YVMC. As such, construction noise impacts would be ***less than significant*** and no mitigation is required.

In addition to adherence to YVMC, which limits the construction hours, the following best management practices (BMPs) are recommended in accordance with General Plan Noise Element Policy N 1-15 that would further reduce noise levels associated with the construction of the Project.

9 Town of Yucca Valley, Municipal Code. Available online at: https://codelibrary.amlegal.com/codes/yuccavalleyca/latest/yuccavalley_ca/0-0-0-16234, accessed November 5, 2025.

1. During all Project grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from noise sensitive receptors nearest the project site.

3. As applicable, all equipment shall be shut off and not left to idle when not in use.

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

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

6. The project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

7. The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

Operational Noise

Traffic Noise

A traffic analysis for the Project was prepared by CR Associates.[10] Based on the traffic analysis contained therein, the Project is anticipated to generate approximately 358 average daily traffic trips (ADT).[11] The closest roadway to the Project Site with a recorded average daily traffic volume is along State Route 62, approximately 3,982 feet west of the Project Site. According to Caltrans data, this roadway segment carries approximately 11,700 average daily trips at Joshua Lane.[12] Based on this data, it is clear the Project's maximum of 358 daily trips would not have the potential double traffic volumes on existing roadways in the vicinity of the Project Site. Since it would take a doubling (i.e., a 100% increase) of roadway traffic volume to increase noise levels by 3 dB(A), the addition of traffic volume from operation of the Project

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10 Chen Ryan Associates, *Traffic Scoping Memorandum – Dutch Bros Coffee Project*, November 2025.

11 Chen Ryan Associates, *Traffic Scoping Memorandum – Dutch Bros Coffee Project*, November 2025.

12 Caltrans, "Annual Average Daily Traffic," available at: https://gisdata-caltrans.opendata.arcgis.com/datasets/d8833219913c44358f2a9a71bda57f76_0/explore?location=34.123058%2C-116.413158%2C18.35

would not increase traffic to levels capable of producing a 3 dB(A) ambient noise increase. Additionally, the Project is consistent with the surrounding land uses, which currently generate mobile noise sources typical of a commercial use. As such, any noise increase would be imperceptible, and impacts would be ***less than significant***.

Parking & Drive-Thru Noise

Various noise events would occur periodically from the Project's parking uses. Such periodic events would include activation of car alarms, sounding of car horns, slamming of car doors, engine revs, and tire squeals. Automobile movements would comprise the most continuous noise source and would generate a noise level of approximately 65 dB(A) at a distance of 25 feet. Car alarm and horn noise events generate sound levels as high as 75 dB(A) at a reference distance of 25 feet, however these noise sources would be sporadic.

Parking for this Project would be provided in 18 spaces in a surface lot on the Project Site. It should also be noted that the existing urban environment of the Project Site currently generates noise levels associated with parking and vehicular noise sources identified above. Although the Project would increase the number of vehicles parking in the area, the types of noise associated with vehicles accessing the parking lot would be similar to those currently occurring in the vicinity of the Project Site. While periodic noise levels from car alarms, horns, slamming of doors, etc., would increase as a result of the Project, these events would not occur consistently over a 24-hour period and thus would not have the potential to increase ambient noise levels at off-site locations by 5 dB(A) Ldn or more, nor exceed the Town's exterior noise standards at off-site locations. As such, noise impacts from the parking areas would be considered less than significant.

As stated in the Project Description, the Project proposes the operation of a dual-lane drive-through facility designed to accommodate 23 queued vehicles that would operate daily between the hours of 5:00 AM and 11:00 PM. Based on field data recorded for a similar use,[13] drive-through activities may generate noise levels of approximately 56.1 dBA Leq at a distance of 50 feet. As shown in **Appendix A**, this data was used to estimate exterior noise levels at the nearby residential receptors. **Table 5, Exterior Noise Levels at Off-Site Receptors**, summarizes the estimated noise levels from parking and drive-through related noise at the nearby residences. As shown, exterior noise levels would not exceed existing noise levels during the daytime or nighttime and impacts would be ***less than significant***

[13] Field data recorded at a commercial retail center with drive-through's for a Panda Express, Taco Bell, and Dutch Bros. Vehicle traffic, parking lot activity, drive-through's and speakers, and truck loading/unloading activities were observed during the measurement. See Appendix A.

Table 5
Exterior Noise Levels at Off-Site Receptors

Off-Site Receptor [a]	Existing Noise Levels (Daytime/Nighttime)[b]	Estimated Noise Levels (dBA Leq)	Exceed Existing Noise Levels?
1. Residences to the south	48.8/50.7	42.8	No

[a] *See Figure 4, Noise Monitoring and Sensitive Receptor Location Map*
[b] *See Appendix A, Noise & Vibration Data*
Source: Impact Sciences, October 2025.

Stationary Noise Sources

As part of the Project, new mechanical equipment, HVAC units, and exhaust fans could be installed on the roof or near the proposed structures. Although the operation of this equipment would generate noise, the design of these on-site HVAC units and exhaust fans would be required to comply with the regulations of the YVMC. Specifically, Chapter 9.34 of the YVMC regulates stationary sources of noise such as HVAC units on neighboring properties. HVAC noise from the Project would also be substantially similar to existing conditions in the Project area and would not be considered a new type of noise source. As such, noise from stationary sources would be ***less than significant***.

Impact NOI-2 **Would the Proposed Project result in the generation of excessive groundborne vibration or groundborne noise levels? *(Less than Significant).***

The FTA provides ground-born vibration impact criteria with respect to building damage during construction activities. PPV, expressed in inches per second, is used to measure building vibration damage. Construction vibration damage criteria are assessed based on structural category (e.g., reinforced-concrete, steel, or timber). FTA guidelines consider 0.2 inch/sec PPV to be the significant impact level for non-engineered timber and masonry buildings. Structures or buildings constructed of reinforced concrete, steel, or timber have a vibration damage criterion of 0.5 inch/sec PPV pursuant to FTA guidelines. Although the nearby structures appear to be constructed of reinforced concrete, steel, or timber, this analysis conservatively applies the 0.2 inch/sec PPV threshold typically applied to non-engineered timber and masonry buildings.

The vibration levels at nearby structures are shown below in **Table 7, Vibration Levels at Off-Site Structures from Project Construction.**

Table 7
Vibration Levels at Off-Site Structures from Project Construction

Sensitive Uses Off-Site [a]	Distance to Project Site (ft.)	Vibration Threshold (PPV)	Estimated PPV (in/sec)
1. Commercial structure to the west	Adjacent [b]	0.2 in/sec	0.191
2. Commercial structure to the east	46	0.2 in/sec	0.036
3. Residences to the south	228	0.2 in/sec	0.003

[a] *See **Figure 4** for locations of off-site structures.*
[b] *These calculations are based on distance from the site boundary to the structures. See **Appendix A** to this report.*

The vibration velocities predicted to occur at the nearest off-site structures would be 0.191 in/sec PPV. As shown in **Table 7**, Project construction vibration levels would not have the potential to exceed the standard 0.2 in/sec threshold established by the FTA. This impact would be ***less than significant***.

Impact NOI-3 **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? (Less than Significant Impact).**

The closest airport is the Yucca Valley Airport, which is located 1.3 miles from the Project Site. However, the Yucca Valley Airport Comprehensive Land Use Plan shows that the Project Site is outside the 60 dBA CNEL noise contour for the airports.[14] While aircraft operations may contribute to the noise in the project area from this airport, the Project Site is not expected to experience airport-related noise levels in excess of the Town's exterior standards. As such, the Project would not expose people residing or working in the project area to excessive airport-related noise levels. This impact would be less than significant.

[14] San Bernardino County Planning Department, Yucca Valley Airport Comprehensive Land Use Plan, February 1992, available at: https://www.yucca-valley.org/home/showpublisheddocument/2600/637009400192130000, accessed November 5, 2025

5.0 REFERENCES

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, 2013. Available online at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf

Caltrans, "Annual Average Daily Traffic," available at: https://gisdata-caltrans.opendata.arcgis.com/datasets/d8833219913c44358f2a9a71bda57f76_0/explore?location=34.123058%2C-116.413158%2C18.35

Chen Ryan Associates, *Traffic Scoping Memorandum – Dutch Bros Coffee Project*, November 2025.

Federal Highway Administration, *Highway Noise Fundamentals*, (1980) 97. Examples of "hard" or reflective sites include asphalt, concrete, and hard and sparsely vegetated soils. Examples of acoustically "soft" or absorptive sites include soft, sand, plowed farmland, grass, crops, heavy ground cover, etc.

Federal Highway Administration, *Highway Noise Mitigation*, (1980) 18.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-2 (General Assessment Construction Noise Criteria), September 2018.

San Bernardino County Planning Department, Yucca Valley Airport Comprehensive Land Use Plan, February 1992, available at: https://www.yucca-valley.org/home/showpublisheddocument/2600/637009400192130000, accessed November 5, 2025

Town of Yucca Valley, Municipal Code. Available online at: https://codelibrary.amlegal.com/codes/yuccavalleyca/latest/yuccavalley_ca/0-0-0-16234, accessed November 5, 2025.

United States Department of Labor. OSH Act of 1970. https://www.osha.gov/laws-regs/oshact/completeoshact. Accessed November 5, 2025.

APPENDIX A

Noise & Vibration Data

NOISE MONITORING FIELD REPORT

Site Map

Project Name: Yucca Valley Dutch Bros

Monitoring Location: Project Site

Date: 10/24/25 Site Number: 1 (day)

Measured By: Annalie Sarrieddine

Measurement Start Time: 7:04 AM

Measurement End Time: 7:19 AM

Total Measurement Time: 15 min.

Noise Meter Model: Larson Davis Sound Expert 821 Calibration: 94.0 (dBA)

Meter Setting: A-Weighted Sound Level (SLOW)

Session File Name: 010E

Primary Noise Sources: Vehicle Traffic, Parking lot Activity

Data Summary

Noise Scale	Noise Level (dBA)
L_{eq}	54.9
L_{max}	67.9
L_{min}	46.5

Other Noise Sources During Monitoring

1. _____ Time: _____
2. _____ Time: _____
3. _____ Time: _____
4. _____ Time: _____
5. _____ Time: _____

Additional Notes:

Person riding a bike in the lot

IMPACT SCIENCES

SoundExpert 821 Summary: 2025-11-13 12:19:16

User: Annalie Sarrieddine

Location: 1 (day)

Job Description: Yucca Valley Dutch Bros

Notes:

Meter General Information

	Model	Serial
Meter	SoundExpert 821	40371
Preamplifier	PRM821	
Microphone	377B02	
Unique File Id	00C:00009DB3:68FB251A:0000010E	

Overall Measurement

Start Date & Time	2025-10-24 07:04:58
Stop Date & Time	2025-10-24 07:19:58
Run Time	00:15:00
Pre-Calibration	
Date/Time	2024-12-14 16:55:03
Calibrator Level (dB)	114.00
Meter Sensitivity (dB re 1V/Pa)	-25.47
Post-Calibration	
Date/Time	---
Calibrator Level (dB)	---
Meter Sensitivity (dB re 1V/Pa)	---
Sensitivity Delta	---
	A
Lweq (dB)	54.9
Lwpk (dB)	93.2
	2025-10-24 07:10:41
LwSmin (dB)	46.5
	2025-10-24 07:13:37
LwSmax (dB)	67.9
	2025-10-24 07:17:03
LwFmin (dB)	46.0
	2025-10-24 07:13:37
LwFmax (dB)	72.5
	2025-10-24 07:05:13
Lwlmin (dB)	47.4
	2025-10-24 07:13:37
Lwlmax (dB)	76.6
	2025-10-24 07:05:13
w = frequency weighting (A, C or Z)	
Community Noise (dB)	**LDN**
	54.9
	LDEN
	54.9
LCeq - LAeq (dB)	16.4
LAIeq (dB)	58.6
Overload Count	0
Overload Duration	00:00:00
	A
Under Range Peak (dB)	50.0
Under Range Limit (dB)	24.0
Noise Floor (dB)	17.0

Ln Percentiles

LAS 5.0 (dB)	58.9
LAS 10.0 (dB)	57.3
LAS 33.3 (dB)	54.6
LAS 50.0 (dB)	53.3
LAS 66.6 (dB)	51.9
LAS 90.0 (dB)	48.6

Exceedances

	Count	Duration (s)
LAS > 85.0 dB	0	0
LAS > 95.0 dB	0	0
LApk > 135.0 dB	0	0
LApk > 137.0 dB	0	0
LApk > 140.0 dB	0	0

Sound Exposure

SELA (dB)	84.4
EA (Pa^2s)	0.1
EA,8 h (Pa^2s)	3.5
EA,40 h (Pa^2s)	17.6
EA (Pa^2h)	0.0
EA,8 h (Pa^2h)	0.0
EA,40 h (Pa^2h)	0.0

NOISE MONITORING FIELD REPORT

Site Map

Project Name: Yucca Valley Dutch Bros

Monitoring Location: Project Site

Date: 10/24/25 Site Number: 1 (night)

Measured By: Annalie Sarrieddine

Measurement Start Time: 6:37 AM

Measurement End Time: 6:52 AM

Total Measurement Time: 15 min.

Noise Meter Model: Larson Davis SoundExpert 821 Calibration: 94.0 (dBA)

Meter Setting: A-Weighted Sound Level (SLOW)

Session File Name: 010A

Primary Noise Sources: Vehicle Traffic

Data Summary

Noise Scale	Noise Level (dBA)
L_{eq}	54.3
L_{max}	64.1
L_{min}	48.0

Other Noise Sources During Monitoring

1. _____ Time: _____
2. _____ Time: _____
3. _____ Time: _____
4. _____ Time: _____
5. _____ Time: _____

Additional Notes:

_____

_____

_____

_____

_____

IMPACT SCIENCES

SoundExpert 821 Summary: 2025-11-13 12:19:49

User: Annalie Sarrieddine

Location: 1 (night)

Job Description: Yucca Valley Dutch Bros

Notes:

Meter General Information

	Model	Serial
Meter	SoundExpert 821	40371
Preamplifier	PRM821	
Microphone	377B02	
Unique File Id	00C:00009DB3:68FB1EAF:0000010A	

Overall Measurement

Start Date & Time	2025-10-24 06:37:35
Stop Date & Time	2025-10-24 06:52:35
Run Time	00:15:00
Pre-Calibration	
Date/Time	2024-12-14 16:55:03
Calibrator Level (dB)	114.00
Meter Sensitivity (dB re 1V/Pa)	-25.47
Post-Calibration	
Date/Time	---
Calibrator Level (dB)	---
Meter Sensitivity (dB re 1V/Pa)	---
Sensitivity Delta	---
	A
Lweq (dB)	54.3
Lwpk (dB)	93.8
	2025-10-24 06:47:02
LwSmin (dB)	48.0
	2025-10-24 06:37:36
LwSmax (dB)	64.1
	2025-10-24 06:38:27
LwFmin (dB)	47.6
	2025-10-24 06:37:35
LwFmax (dB)	70.7
	2025-10-24 06:47:02
Lwimin (dB)	49.1
	2025-10-24 06:37:36
Lwimax (dB)	75.5
	2025-10-24 06:47:02
w = frequency weighting (A, C or Z)	
Community Noise (dB)	**LDN**
	64.3
	LDEN
	64.3
LCeq - LAeq (dB)	16.6
LAIeq (dB)	58.4
Overload Count	0
Overload Duration	00:00:00
	A
Under Range Peak (dB)	50.0
Under Range Limit (dB)	24.0
Noise Floor (dB)	17.0

Ln Percentiles

LAS 5.0 (dB)	57.7
LAS 10.0 (dB)	56.5
LAS 33.3 (dB)	54.3
LAS 50.0 (dB)	53.1
LAS 66.6 (dB)	52.2
LAS 90.0 (dB)	51.2

Exceedances

	Count	Duration (s)
LAS > 85.0 dB	0	0
LAS > 95.0 dB	0	0
LApk > 135.0 dB	0	0
LApk > 137.0 dB	0	0
LApk > 140.0 dB	0	0

Sound Exposure

SELA (dB)	83.8
EA (Pa^2s)	0.1
EA,8 h (Pa^2s)	3.1
EA,40 h (Pa^2s)	15.5
EA (Pa^2h)	0.0
EA,8 h (Pa^2h)	0.0
EA,40 h (Pa^2h)	0.0

NOISE MONITORING FIELD REPORT

Site Map

Project Name: Yucca Valley Dollar Bros

Monitoring Location: Residences to the south

Date: 10/24/25 Site Number: 2 (day)

Measured By: Annalie Sarrieddine

Measurement Start Time: 7:25 AM

Measurement End Time: 7:40 AM

Total Measurement Time: 15 min.

Noise Meter Model: Larson Davis SoundExpert 821 Calibration: 94.0 (dBA)

Meter Setting: A-Weighted Sound Level (SLOW)

Session File Name: 0112

Primary Noise Sources: Vehicle Traffic, Neighborhood Activity

Data Summary

Noise Scale	Noise Level (dBA)
L_{eq}	48.8
L_{max}	68.3
L_{min}	38.8

Other Noise Sources During Monitoring

1. _____ Time: _____
2. _____ Time: _____
3. _____ Time: _____
4. _____ Time: _____
5. _____ Time: _____

Additional Notes:

_____

_____

_____

_____

_____

IMPACT SCIENCES

SoundExpert 821 Summary: 2025-11-13 12:18:44

User: Annalie Sarrieddine

Location: 2 (day)

Job Description: Yucca Valley Dutch Bros

Notes:

Meter General Information

	Model	Serial
Meter	SoundExpert 821	40371
Preamplifier	PRM821	
Microphone	377B02	
Unique File Id	00C:00009DB3:68FB29EA:00000112	

Overall Measurement

Start Date & Time	2025-10-24 07:25:30
Stop Date & Time	2025-10-24 07:40:30
Run Time	00:15:00
Pre-Calibration	
Date/Time	2024-12-14 16:55:03
Calibrator Level (dB)	114.00
Meter Sensitivity (dB re 1V/Pa)	-25.47
Post-Calibration	
Date/Time	---
Calibrator Level (dB)	---
Meter Sensitivity (dB re 1V/Pa)	---
Sensitivity Delta	---
	A
Lweq (dB)	48.8
Lwpk (dB)	103.7
	2025-10-24 07:25:56
LwSmin (dB)	38.8
	2025-10-24 07:28:32
LwSmax (dB)	68.3
	2025-10-24 07:25:56
LwFmin (dB)	37.2
	2025-10-24 07:35:43
LwFmax (dB)	76.6
	2025-10-24 07:25:56
Lwlmin (dB)	40.1
	2025-10-24 07:28:29
Lwlmax (dB)	80.9
	2025-10-24 07:25:56
w = frequency weighting (A, C or Z)	
Community Noise (dB)	**LDN**
	48.8
	LDEN
	48.8
LCeq - LAeq (dB)	13.0
LAIeq (dB)	58.3
Overload Count	0
Overload Duration	00:00:00
	A
Under Range Peak (dB)	50.0
Under Range Limit (dB)	24.0
Noise Floor (dB)	17.0

Ln Percentiles

LAS 5.0 (dB)	52.1
LAS 10.0 (dB)	50.3
LAS 33.3 (dB)	47.6
LAS 50.0 (dB)	46.2
LAS 66.6 (dB)	45.0
LAS 90.0 (dB)	42.2

Exceedances

	Count	Duration (s)
LAS > 85.0 dB	0	0
LAS > 95.0 dB	0	0
LApk > 135.0 dB	0	0
LApk > 137.0 dB	0	0
LApk > 140.0 dB	0	0

Sound Exposure

SELA (dB)	78.4
EA (Pa^2s)	0.0
EA,8 h (Pa^2s)	0.9
EA,40 h (Pa^2s)	4.4
EA (Pa^2h)	0.0
EA,8 h (Pa^2h)	0.0
EA,40 h (Pa^2h)	0.0

NOISE MONITORING FIELD REPORT

Site Map

Project Name: Yucca Valley Dutch Bros

Monitoring Location: Residences to the South

Date: 10/24/25 Site Number: 2 (Night)

Measured By: Annalie Sarrieddine

Measurement Start Time: 6:09 AM

Measurement End Time: 6:24 AM

Total Measurement Time: 15 min.

Noise Meter Model: Larson Davis SoundExpert 821 Calibration: 94.0 (dBA)

Meter Setting: A-Weighted Sound Level (SLOW)

Session File Name: 0106

Primary Noise Sources: Vehicle Traffic, Neighborhood Activity

- **Data Summary**

Noise Scale	Noise Level (dBA)
L_{eq}	50.7
L_{max}	65.6
L_{min}	42.1

Other Noise Sources During Monitoring

1. _____ Time: _____
2. _____ Time: _____
3. _____ Time: _____
4. _____ Time: _____
5. _____ Time: _____

Additional Notes:

Dog barking sporadically

IMPACT SCIENCES

SoundExpert 821 Summary: 2025-11-13 12:20:42

User: Annalie Sarrieddine

Location: 2 (night)

Job Description: Yucca Valley Dutch Bros

Notes:

Meter General Information

	Model	Serial
Meter	SoundExpert 821	40371
Preamplifier	PRM821	
Microphone	377B02	
Unique File Id	00C:00009DB3:68FB1821:00000106	

Overall Measurement

Start Date & Time	2025-10-24 06:09:37
Stop Date & Time	2025-10-24 06:24:37
Run Time	00:15:00
Pre-Calibration	
Date/Time	2024-12-14 16:55:03
Calibrator Level (dB)	114.00
Meter Sensitivity (dB re 1V/Pa)	-25.47
Post-Calibration	
Date/Time	---
Calibrator Level (dB)	---
Meter Sensitivity (dB re 1V/Pa)	---
Sensitivity Delta	---
	A
Lweq (dB)	50.7
Lwpk (dB)	87.5
	2025-10-24 06:24:21
LwSmin (dB)	42.1
	2025-10-24 06:22:51
LwSmax (dB)	65.6
	2025-10-24 06:18:27
LwFmin (dB)	41.5
	2025-10-24 06:16:18
LwFmax (dB)	67.4
	2025-10-24 06:24:21
Lwlmin (dB)	42.9
	2025-10-24 06:21:22
Lwlmax (dB)	72.1
	2025-10-24 06:24:21
w = frequency weighting (A, C or Z)	
Community Noise (dB)	**LDN**
	60.7
	LDEN
	60.7
LCeq - LAeq (dB)	11.0
LAIeq (dB)	53.9
Overload Count	0
Overload Duration	00:00:00
	A
Under Range Peak (dB)	50.0
Under Range Limit (dB)	24.0
Noise Floor (dB)	17.0

Ln Percentiles

LAS 5.0 (dB)	54.6
LAS 10.0 (dB)	52.7
LAS 33.3 (dB)	49.5
LAS 50.0 (dB)	48.0
LAS 66.6 (dB)	46.4
LAS 90.0 (dB)	44.4

Exceedances

	Count	Duration (s)
LAS > 85.0 dB	0	0
LAS > 95.0 dB	0	0
LApk > 135.0 dB	0	0
LApk > 137.0 dB	0	0
LApk > 140.0 dB	0	0

Sound Exposure

SELA (dB)	80.2
EA (Pa^2s)	0.0
EA,8 h (Pa^2s)	1.4
EA,40 h (Pa^2s)	6.8
EA (Pa^2h)	0.0
EA,8 h (Pa^2h)	0.0
EA,40 h (Pa^2h)	0.0

NOISE MONITORING FIELD REPORT

Project Name: Demaree Travel Plaza

Monitoring Location: 821 South Akers Street plaza, City of Visalia

Date: 11/7/2023 **Site Number:** REFERENCE

Measured By: Annalie Sarrieddine

Start Time: 4:46 PM

Measurement End Time: 5:01 PM

Total Measurement Time: 15 min.

Noise Meter Model: Larson Davis Soundtrack LxT

Meter Setting: A-Weighted Sound Level (SLOW)

Session File Name: Lxt. Data

A reference noise measurement was taken approximately 50 feet from a fast food drive through, with truck loading/unloading also occurring approximately 50 feet away.

Calibration: 94.0 (dBA)

Primary Noise Sources: Vehicle Traffic, Fast Food drive through speaker, truck loading

Data Summary

Noise Scale	Noise Level (dBA)
L_{eq}	56.1
L_{max}	72.1
L_{min}	48.9

Other Noise Sources During Monitoring

1. Speaker, Drive through Time: 4:48
2. " Time: 4:57
3. Time:
4. Time:
5. Time:

Additional Notes:

Truck Departed at 4:53 PM, Truck loading in process for the duration of the measurement

IMPACT SCIENCES

Measurement Report

Report Summary

Meter's File Name	LxT_Data.277.s	Computer's File Name	LxT_0005667-20231107 164620-LxT_Data.277.ldbin
Meter	LxT1 0005667	Firmware	2.302
User		Location	
Job Description			
Note			

Start Time	2023-11-07 16:46:20	Duration	0:15:00.0		
End Time	2023-11-07 17:01:20	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-07 16:39:41	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	56.1 dB		
LAE	85.6 dB	SEA	--- dB
EA	40.7 µPa²h		
EA8	1.3 mPa²h		
EA40	6.5 mPa²h		
LA_{peak}	99.5 dB	2023-11-07 16:47:12	
LAS_{max}	72.1 dB	2023-11-07 16:47:12	
LAS_{min}	48.9 dB	2023-11-07 17:01:01	
LA_{eq}	56.1 dB		
LC_{eq}	67.2 dB	LC_{eq} - LA_{eq}	11.1 dB
LAI_{eq}	61.5 dB	LAI_{eq} - LA_{eq}	5.4 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	56.1 dB		67.2 dB		--- dB	
$Ls_{(max)}$	72.1 dB	2023-11-07 16:47:12	--- dB	None	--- dB	None
$LS_{(min)}$	48.9 dB	2023-11-07 17:01:01	--- dB	None	--- dB	None
$L_{Peak(max)}$	99.5 dB	2023-11-07 16:47:12	--- dB	None	--- dB	None

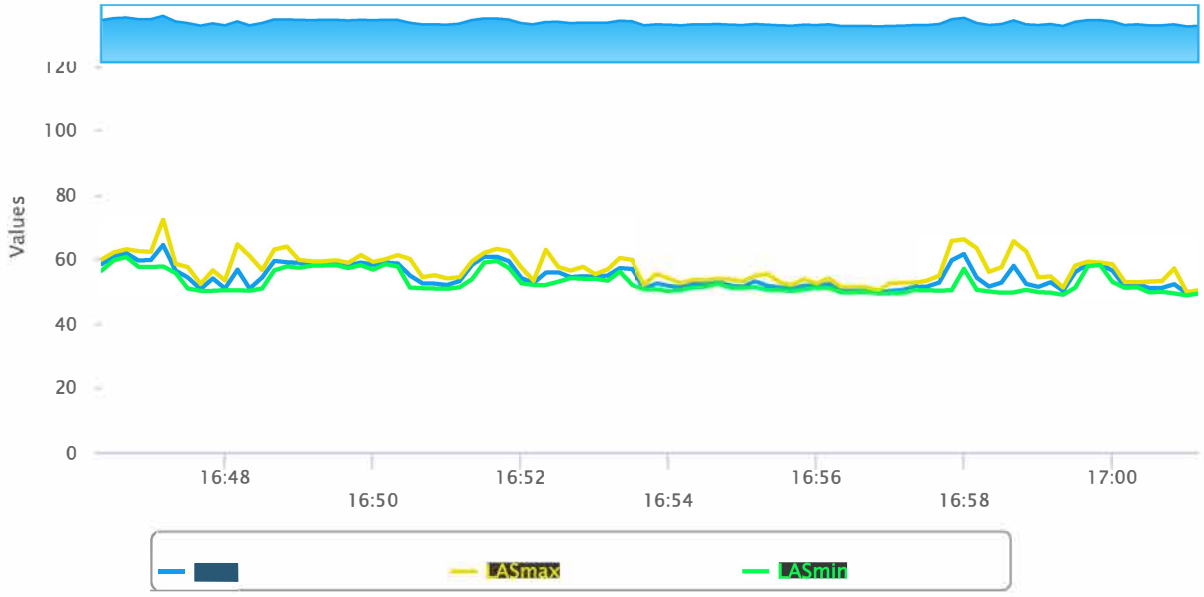
Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 0.0	--- dB
LAS 0.0	--- dB
LAS 10.0	59.2 dB
LAS 33.3	56.3 dB
LAS 66.7	51.7 dB
LAS 90.0	50.3 dB

Time History

140


120
100
80
60
40
20
0
Values
16:48
16:50
16:52
16:54
16:56
16:58
17:00
LASmax
LASmin

On-Site Noise Sources

Drive-thru and Loading/Unloading

Receptor	Distance to Activity (ft)[1]	Barrier Insertion Loss	Estimated Noise Levels dBA Leq [2]
1	228	0	42.8

Notes:

1: Distance measured from nearest point of receptor to nearest point of Project activity

2: Field measurement indicates drive-thru and loading noise to be approx 56 dBA Leq at 50 ft.

See noise monitoring data.

Project Site Noise Level (Ldn) (Location 1)		
Hour of Day	**dBA Leq**	**With Ldn Penalty**
12:00 AM	54.3	64.3
1:00 AM	54.3	64.3
2:00 AM	54.3	64.3
3:00 AM	54.3	64.3
4:00 AM	54.3	64.3
5:00 AM	54.3	64.3
6:00 AM	54.3	64.3
7:00 AM	54.9	54.9
8:00 AM	54.9	54.9
9:00 AM	54.9	54.9
10:00 AM	54.9	54.9
11:00 AM	54.9	54.9
12:00 PM	54.9	54.9
1:00 PM	54.9	54.9
2:00 PM	54.9	54.9
3:00 PM	54.9	54.9
4:00 PM	54.9	54.9
5:00 PM	54.9	54.9
6:00 PM	54.9	54.9
7:00 PM	54.9	54.9
8:00 PM	54.9	54.9
9:00 PM	54.9	54.9
10:00 PM	54.3	64.3
11:00 PM	54.3	64.3
	Calculated Ldn:	**60.8**

Daytime Hours:	7:00 AM - 10:00 PM
Nighttime Hours:	10:00 PM - 7:00 AM

Note: Ldn based on measurement data collected at Location 1. See noise monitoring data.

Project Site Noise Level (Ldn) (Location 2)		
Hour of Day	**dBA Leq**	**With Ldn Penalty**
12:00 AM	50.7	60.7
1:00 AM	50.7	60.7
2:00 AM	50.7	60.7
3:00 AM	50.7	60.7
4:00 AM	50.7	60.7
5:00 AM	50.7	60.7
6:00 AM	50.7	60.7
7:00 AM	48.8	48.8
8:00 AM	48.8	48.8
9:00 AM	48.8	48.8
10:00 AM	48.8	48.8
11:00 AM	48.8	48.8
12:00 PM	48.8	48.8
1:00 PM	48.8	48.8
2:00 PM	48.8	48.8
3:00 PM	48.8	48.8
4:00 PM	48.8	48.8
5:00 PM	48.8	48.8
6:00 PM	48.8	48.8
7:00 PM	48.8	48.8
8:00 PM	48.8	48.8
9:00 PM	48.8	48.8
10:00 PM	50.7	60.7
11:00 PM	50.7	60.7
	Calculated Ldn:	**56.9**

Daytime Hours:	7:00 AM - 10:00 PM
Nighttime Hours:	10:00 PM - 7:00 AM

Note: Ldn based on measurement data collected at Location 2. See noise monitoring data.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/13/2025
Case Description: Yucca Valley Dutch Bros (Debris Removal)

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	65	65

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	367	0
Tractor	No	40	84		367	0

Results

		Calculated (dBA)	
Equipment		*Lmax	Leq
Concrete Saw		72.3	65.3
Tractor		66.7	62.7
	Total	72.3	67.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/13/2025
Case Descriptio Yucca Valley Dutch Bros (Grading)

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	65	65

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		367	0
Tractor	No	40	84		367	0

Results

		Calculated (dBA)	
Equipment		*Lmax	Leq
Grader		67.7	63.7
Tractor		66.7	62.7
	Total	67.7	66.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/13/2025
Case Description Yucca Valley Dutch Bros (Building Construction)

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	65	65

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	367	0
Tractor	No	40	84		367	0

Results

		Calculated (dBA)	
Equipment		*Lmax	Leq
Paver		59.9	56.9
Tractor		66.7	62.7
	Total	66.7	63.7

*Calculated Lmax is the Loudest value.

Yucca Valley Dutch Bros Project — Commercial structure to the west

Ref=	Reference vibration level (PPV)		
RefD=	Reference distance for Reference vibration level (Feet)		

Vibration PPV		
Ref=	0.089	Based on type of equipment
RefD=	25	
D=	15	Distance from equipment to sensitive receptor
Equip=	0.191	
Annoyance VdB		
Ref=	87	Based on type of equipment
RefD=	25	
D=	15	Distance from equipment to sensitive receptor
Equip=	94	

Peak demolition vibration based on utilizing a large bulldozer.

Source: FTA Tranist Noise and Vibration Impact Assessment, 2006.

Yucca Valley Dutch Bros Project — Commercial structure to the east

Ref=	Reference vibration level (PPV)		
RefD=	Reference distance for Reference vibration level (Feet)		

Vibration PPV		
Ref=	0.089	Based on type of equipment
RefD=	25	
D=	46	Distance from equipment to sensitive receptor
Equip=	0.036	
Annoyance VdB		
Ref=	87	Based on type of equipment
RefD=	25	
D=	46	Distance from equipment to sensitive receptor
Equip=	79	

Peak demolition vibration based on utilizing a large bulldozer.

Source: FTA Tranist Noise and Vibration Impact Assessment, 2006.

Yucca Valley Dutch Bros Project — Residences to the south

Ref= Reference vibration level (PPV)

RefD= Reference distance for Reference vibration level (Feet)

Vibration PPV		
Ref=	0.089	Based on type of equipment
RefD=	25	
D=	228	Distance from equipment to sensitive receptor
Equip=	0.003	
Annoyance VdB		
Ref=	87	Based on type of equipment
RefD=	25	
D=	228	Distance from equipment to sensitive receptor
Equip=	58	

Peak demolition vibration based on utilizing a large bulldozer.

Source: FTA Tranist Noise and Vibration Impact Assessment, 2006.