Noise Technical Report

Pacific Palmdale Center Project

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ACC	Air-cooled condensers
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Palmdale
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibel
DOT	Department of Transportation
FICON	Federal Interagency Committee on Noise
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HSR	High-Speed Rail
HVAC	Heating, ventilation, and air conditioning
ips	inches per second
ISO	International Organization of Standardization
L_{dn}	day–night average noise level
L_{eq}	equivalent noise level
L_{max}	maximum sound level
L_{min}	minimum sound level
mph	miles per hour
OBCF	Octave-band center frequency
OPR	Governor's Office of Planning and Research
Pacific Palmdale Center	proposed project
PPV	peak particle velocity
PWL	Sound power level
RCNM	Roadway Construction Noise Model
RMS	Root Mean Square
SLM	Sound level meter
SPL	Sound pressure level
SR	State Route
ST	Short-term
TIA	Traffic Impact Analysis
TNM	Traffic Noise Model
VdB	Velocity Decibel

1 Introduction

1.1 Report Purpose and Scope

The purpose of this technical report is to assess the potential noise impacts associated with construction and operation of the Pacific Palmdale Center Project (project or proposed project). This analysis uses the significance thresholds in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.).

1.2 Regional and Local Setting

The project site is located in the north central area of the City of Palmdale (City), within northwestern Los Angeles County, California. The City is bounded by the City of Lancaster and the unincorporated community of Quartz Hill to the north, the unincorporated communities of Littlerock and Lake Los Angeles to the east, the unincorporated community of Acton to the south, and the unincorporated community of Leona Valley to the west. The project site is located at the northeast corner of West Rancho Vista Boulevard and Division Street, north of West Rancho Vista Boulevard, east of Division Street, south of Avenue O-12, and west of Sierra Highway (Figure 1, Project Location Map).

The project includes Assessor's Parcel Numbers: 3006-27-001, -002, -003, -004, and -005. The project consists of five contiguous parcels, occupying approximately 67.07-acres of undeveloped vacant land (Figure 2, Project Site). Regional access to the project area is provided by State Route (SR) 14 and SR 138. The project site is bounded to the south by West Rancho Vista Boulevard, to the west by Division Street, to the east by Sierra Highway, and to the north by vacant land. The Metrolink railroad is located directly east of the project site, parallel to Sierra Highway.

1.3 Project Description

The project area would be developed with one (1) new industrial building, 1,000,000 square feet in size, located in the central area of the project site. The building would be constructed with dock-high doors along the north and south building walls. A 10,000-square foot office space area would be located in the southwest corner of the building with another potential office space area located in the northeast corner of the building. The new industrial building would be surrounded by concrete pavements in the automobile parking and drive areas, and Portland cement concrete pavements in the truck docks and truck traffic areas. The warehouse building would have an approximate height of 50 feet. A 12-foot-tall concrete screen wall would line the perimeter of the project site, except for the trailer stall parking area east of the warehouse building, with 8-foot-tall telescoping tube steel gates at the entry points of the project site.

The proposed industrial building includes 74 dock-high stations on the north and south sides of the building, for a total of 140 dock-high stations. In addition to the dock-high stations, there are 86 trailer stalls north of the northern side dock-high stations and 125 trailers stalls south of the southern side dock-high station. There are 129 trailer stalls east of the building and 634 passenger car parking stalls west of the building (Figure 3, Site Plan).

Operational Characteristics

The project would support a variety of activities associated with an industrial building, including the ingressing and egressing of passenger vehicles and trucks, the loading and unloading of trucks with designated truck courts/loading areas, and the internal and external movement of materials around the project site via forklifts, pallet jacks, yard hostlers, and similar equipment. The warehouse space will support cold storage in 25% of the warehouse space. In addition, the office space would support general internal office activities related to the industrial use. The project would employ approximately 1,180 employees.

On- and Off-Site Improvements

The project would also include improvements along the project's street frontage, including landscaping and street and sidewalk improvements. A variety of trees, shrubs, and groundcovers would be planted within the project frontage's landscape setback area, within the landscape areas found around the parking lot areas and perimeter of the project site. Division Street would be widened along the property frontage. Avenue O-12 would be paved and developed into a full street with a center median, per City requirements. The project would connect to the existing sewer line along Sierra Highway from Avenue O-12. The tie-in to existing water infrastructure would require construction of approximately 2,500 feet of 12-inch diameter watermain in West Rancho Vista Blvd and approximately 2,200 feet of 16-inch diameter watermain in Sierra Highway.

Site Access and Parking

Access to the project site would be provided with the addition of five driveways. The northern driveway on Division Street would be for automobile access only and the southern driveway would be used by both automobiles and trucks with right-in, right-out access. The westerly driveway on Avenue O-12 would be for truck access only and the easterly driveway on Avenue O-12 would be used by both automobiles and trucks. On West Rancho Vista Boulevard, the driveway would be for truck access and only right-out access would be allowed. The project would include a total of 634 passenger parking stalls and 32 bicycle parking spaces.

1.4 Fundamentals of Noise and Vibration

The following is a brief discussion of fundamental noise concepts and terminology.

1.4.1 Sound, Noise, and Acoustics

Sound is a process that consists of three components: the sound source, sound path, and sound receiver. All three components must be present for sound to exist. Without a source to produce sound, there is no sound. Similarly, without a medium to transmit sound pressure waves, there is no sound. Finally, sound must be received; a hearing organ, sensor, or object must be present to perceive, register, or be affected by sound or noise. In most situations, there are many different sound sources, paths, and receptors rather than just one of each. Acoustics is the field of science that deals with production, propagation, reception, effects, and control of sound. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired.

1.4.2 Sound Pressure Levels and Decibels

The amplitude of a sound wave determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewtons per square meter, also called micropascals. One micropascal is approximately one-hundred billionth (0.00000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascals would be very cumbersome and the sensitivity of human hearing to changes in micropascals is rather coarse (e.g., a doubling of micropascals is just audible to most people), sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressure to a reference pressure squared. These units are called Bels. To provide a finer resolution, a Bel is subdivided into 10 decibels (dB).

1.4.3 A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by the characteristics of the human ear.

Human hearing is limited not only in the range of audible frequencies, but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 hertz, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise evaluations. Noise levels are typically reported in terms of A-weighted sound levels. All sound levels discussed in this report are A-weighted decibels (dBA). Examples of typical noise levels for common indoor and outdoor activities are depicted in Table 1.

Table 1. Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
—	110	Rock band
Jet fly over at 300 meters (1,000 feet)	100	—
Gas lawn mower at 1 meter (3 feet)	90	—
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet); garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime; gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area; heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)

Table 1. Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
Quiet urban, daytime	50	Large business office; dishwasher next room
Quiet urban, nighttime	40	Theater; large conference room (background)
Quiet suburban, nighttime	30	Library
Quiet rural, nighttime	20	Bedroom at night; concert hall (background)
—	10	Broadcast/Recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2020.

1.4.4 Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound pressure levels of 1 dBA when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is *perceived* as twice (if a gain) or half (if a loss) as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level.

1.4.5 Noise Descriptors

Additional units of measure have been developed to evaluate the long-term characteristics of sound. The energy-equivalent sound level (L_{eq}) is also referred to as the time-average sound level. It is the equivalent steady-state or constant sound level that in a stated period of time would contain the same acoustical energy as the time-varying sound level during the same time period. For instance, the 1-hour A-weighted equivalent sound level, $L_{eq(h)}$, is the energy average of the A-weighted sound levels occurring during a 1-hour period and is the basis for most of the County Noise Ordinance standards.

People are generally more sensitive to and thus potentially more annoyed by noise occurring during the evening and nighttime hours. Hence, another noise descriptor used in community noise assessments—the community noise equivalent level (CNEL)—represents a time-weighted, 24-hour average noise level based on the A-weighted sound level. However, unlike an unmodified 24-hour L_{eq} value, the CNEL descriptor accounts for increased noise sensitivity during the evening (7 p.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) by adding 5 dBA and 10 dBA, respectively, to the average sound levels occurring during these defined hours within a 24-hour period. Whereas CNEL is used mostly in California, the L_{dn} descriptor (day-night average noise level, which is the same as CNEL with the only exception of not including the 5 dBA evening correction) is used more often for environmental noise evaluations for federal projects.

1.4.6 Sound Propagation

Sound propagation (i.e., the traverse of sound from a noise emission source position to a receiver location) is influenced by multiple factors that include geometric spreading, ground absorption, atmospheric effects, and occlusion by natural terrain and/or features of the built environment.

Sound levels attenuate (or diminish) geometrically at a rate of approximately 6 dBA per doubling of distance from an outdoor stationary point-type source due to the spherical spreading of sound energy with increasing distance travelled. The effects of atmospheric conditions such as humidity, temperature, and wind gradients are typically distance-dependent and can also temporarily either increase or decrease sound levels measured or perceived at a receptor location. In general, the greater the distance the receiver is from the source of sound emission, the greater the potential for variation in sound levels at the receptor due to these atmospheric effects. Additional attenuation can result from sound path occlusion and diffraction due to intervention of natural (ridgelines, dense forests, etc.) and built features (such as solid walls, buildings, and other structures).

1.4.7 Ground-borne Vibration Fundamentals

Ground-borne vibration is fluctuating or oscillatory motion transmitted through the ground mass (i.e., soils, clays, and rock strata). The strength of ground-borne vibration attenuates rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. Several basic measurement units are commonly used to describe the intensity of ground vibration. The descriptors used by the Federal Transit Administration (FTA) are peak particle velocity (PPV), in units of inches per second (ips), and velocity decibel (VdB) that is based on a root-mean square (RMS) of the vibration signal magnitude. The calculation to determine PPV at a given distance is as follows:

$$PPV_{distance} = PPV_{ref} * (25/D)^{1.5}$$

Where:

$PPV_{distance}$ = the peak particle velocity in inches per second of the equipment adjusted for distance

PPV_{ref} = the reference vibration level in inches per second at 25 feet

D = the distance from the equipment to the receiver

2 Regulatory Setting

2.1 Federal

2.1.1 Federal Transit Administration

In its Transit Noise and Vibration Impact Assessment guidance manual, the FTA recommends a daytime construction noise level threshold of 80 dBA L_{eq} over an 8-hour period (FTA 2018) when detailed construction noise assessments are performed to evaluate potential impacts to community residences surrounding a project. Although this FTA guidance is not a regulation, it can serve as a quantified standard in the absence of such noise limits at the state and local jurisdictional levels.

2.1.2 Federal Interagency Committee on Noise

Some guidance regarding the determination of a substantial permanent increase in ambient noise levels in the project vicinity above existing levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON 1992), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of people highly annoyed by the noise. Annoyance is a qualitative measure of the adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn}. The changes in noise exposure that are shown below are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis to define a substantial increase in community noise levels related to all transportation noise sources and permanent non-transportation noise sources.

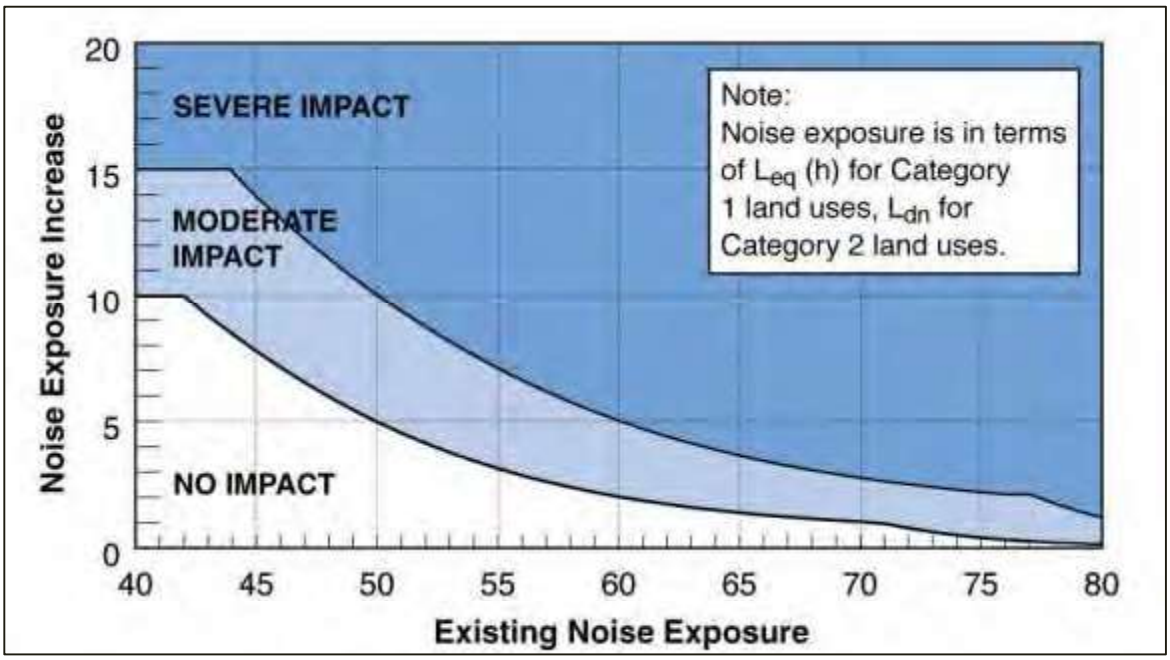
- Outdoor ambient sound level without the project is less than 60 dBA L_{dn}, then a project-attributed increase of 5 dBA or more would be considered significant;
- Outdoor ambient sound level without the project is between 60 and 65 dBA L_{dn}, project-attributed increase of 3 dBA or more would be considered significant; and
- Outdoor ambient sound level without the project is greater than 65 dBA L_{dn}, then project-attributed increase of 1.5 dBA or more would be considered significant.

2.1.3 Federal Railroad Administration

The Federal Railroad Administration (FRA) provides guidance on determining impact related to high-speed rail noise effects. The criteria used in evaluating noise impacts are based on maintaining a noise environment considered acceptable for land uses where noise way have an effect. These criteria take into account the unusual characteristics of high-speed rail operations. The noise impact criteria for human annoyance are based on the

comparison of the existing outdoor noise levels and the future outdoor noise levels from a proposed high-speed train project.

An increase in noise exposure is dependent on land use. For noise-sensitive land uses, Exhibit I (reproduced from Figure 3-2 in the FRA High-Speed Ground Transportation Noise and Vibration Impact Assessment Final Report, 2012) displays the noise exposure increase required by the FRA to be considered a moderate or severe impact. A Category 2 land use represents noise-sensitive residential land uses.



Source; Figure 3-2 from the Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment Final Report (2012)
Exhibit I; increase in Cumulative Noise Levels Allowed by Criteria (Land-Use Cat. 1 & 2)

2.2 State

2.2.1 California Code of Regulations, Title 24

Title 24 of the California Code of Regulations sets standards that new developments in California must meet. According to Title 24, interior noise levels are not to exceed 45 dBA CNEL in any habitable room (ICC 2019).

2.2.2 California Department of Health Services Guidelines

The California Department of Health Services has developed guidelines of community noise acceptability for use by local agencies (OPR 2017). Selected relevant levels are listed here:

- Below 60 dBA CNEL: normally acceptable for low-density residential use
- 50 to 70 dBA CNEL: conditionally acceptable for low-density residential use
- Below 65 dBA CNEL: normally acceptable for high-density residential use and transient lodging

- 60 to 70 dBA CNEL: conditionally acceptable for high-density residential, transient lodging, churches, educational, and medical facilities

The normally acceptable exterior noise level for high-density residential use is up to 65 dBA CNEL. Additionally, this exterior noise level limit is consistent with the City of Santee General Plan Noise Element, which considers multi-family unit noise-sensitive land uses.

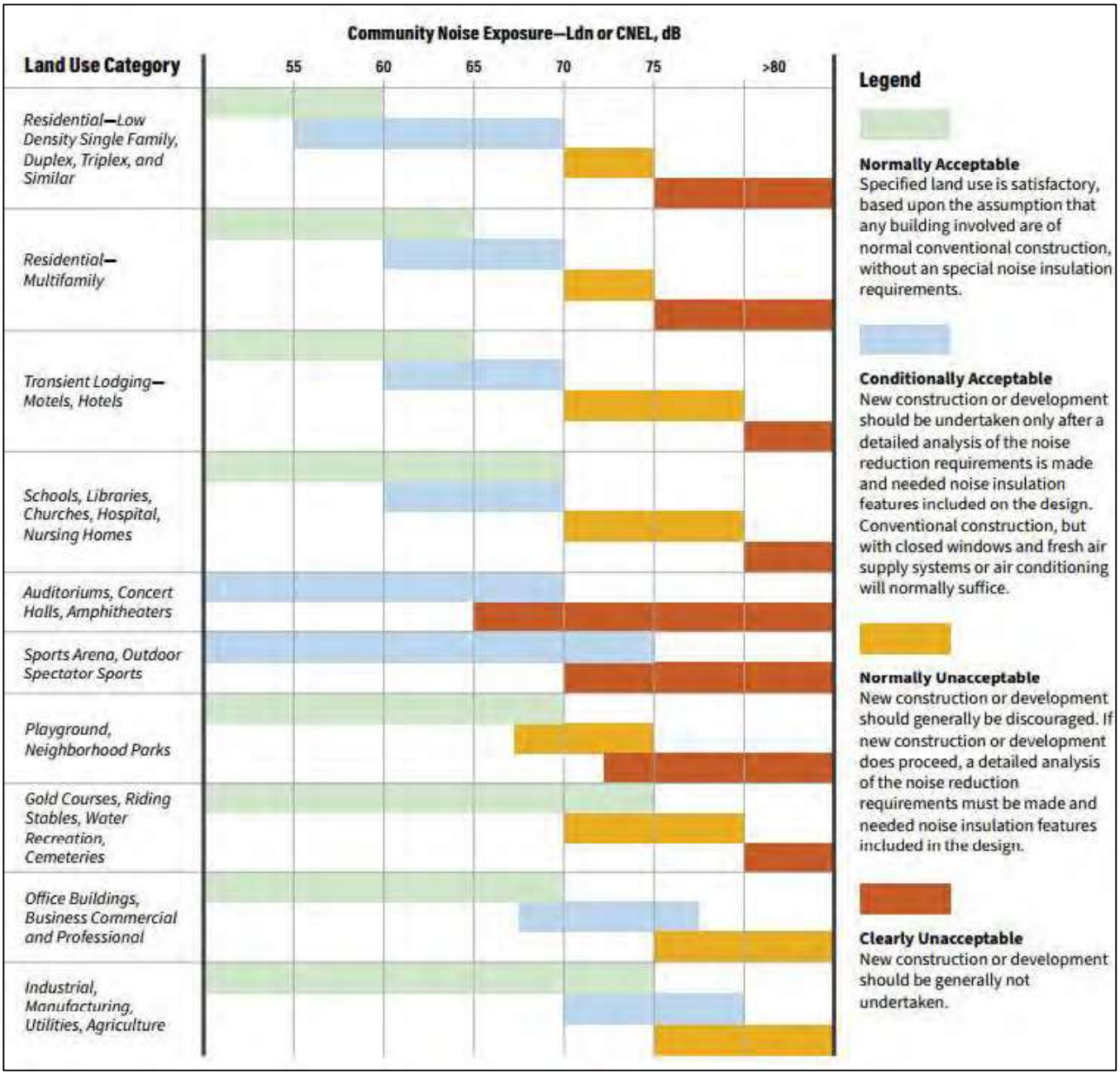
2.2.3 California Department of Transportation

In its Transportation and Construction Vibration Guidance Manual (Caltrans 2020), the California Department of Transportation (Caltrans) recommends 0.5 ips PPV as a threshold for the avoidance of structural damage to typical newer residential buildings exposed to continuous or frequent intermittent sources of ground-borne vibration. For transient vibration events, such as blasting, the damage risk threshold would be 1.0 ips PPV (Caltrans 2020) at the same type of newer residential structures. For older structures, these guidance thresholds would be more stringent: 0.3 ips PPV for continuous/intermittent vibration sources, and 0.5 ips PPV for transient vibration events. With respect to human annoyance, Caltrans guidance indicates that building occupants exposed to continuous ground-borne vibration in the range of 0.2-0.6 ips PPV would find it "unpleasant or "annoying" and thus a likely significant impact. Although these Caltrans guidance thresholds are not regulations, they can serve as quantified standards in the absence of such limits at the local jurisdictional level.

2.3 Local

2.3.1 City of Palmdale Noise Level Compatibility Standards

The Noise Element of the City's General Plan (City of Palmdale 2023) establishes target maximum noise levels in the City, categorized by land use. The Noise Element sets the following limitations on noise levels for receiving properties adjacent to the project site. Exhibit II contains the Noise / Land Use Compatibility Guide from the General Plan Noise Element, which establishes a normally acceptable noise level of 60 dBA L_{dn} or CNEL for single-family residential land uses and 75 dBA L_{dn} for industrial land uses.



Source; Figure 16.1 from the City of Palmdale General Plan (2023)
Exhibit II; California Noise Land Use Compatibility Standards

2.3.2 Transportation-Related Noise Standards

The City's Noise Element establishes a policy for exterior sensitive areas to be protected from high traffic noise levels. The Noise Element sets 65 dBA L_{dn} for exterior noise levels and 45 dBA L_{dn} for interior noise levels as the "normally acceptable" level.

For interior noise, the Noise Element also establishes 45 dBA L_{dn} as the maximum acceptable level for habitable rooms when exterior predicted noise levels due to traffic are 65 dBA L_{dn} or more. If windows and doors are required to be closed to meet this standard, then mechanical ventilation (i.e., air conditioning) shall be included in the project design.

2.3.3 Noise Element Objectives and Policies

The Noise Element contains a section on noise-related goals and policies for the City, a selection of which that are applicable to the project are presented here.

Noise Exposure

Goal N-1 Minimize resident exposure to excessive noise.

N-1.1 Future Noise Levels. Use the state-recommended noise level guidelines shown in Figure 16.1 (reproduced as Exhibit I) to determine the compatibility of proposed land uses with the existing and future noise environment of each proposed development site.

N-1.2 Restrict Land Uses. Restrict noise sensitive land uses near existing or future air, rail, or highway transportation noise sources unless mitigation measures have been incorporated into the design of the project to reduce the noise levels at the noise sensitive land use to less than 65 dBA CNEL at all exterior living spaces including but not limited to, single-family yards and multi-family patios, balconies, pool areas, cook-out areas and related private recreation areas.

N-1.3 Acoustical Analysis for Stationary Noise Sources. When proposed stationary noise sources could exceed an exterior noise level of 65 dBA CNEL at the property line or could impact future noise sensitive land uses, require preparation of an acoustical analysis and mitigation measures to reduce exterior noise levels to no more than 65 dBA CNEL at the property line.

N-1.4 Noise Abatement Strategies. Explore the use of noise abatement strategies such as natural barriers, sound walls, and other buffers to mitigate excessive noise.

Goal N-2 Maintain acceptable noise environments throughout the City.

N-2.1 Extreme Noise Sources. Avoid locating new extreme noise sources adjacent to noise sensitive land uses unless mitigation measures can mitigate noise impacts to the sensitive uses.

N-2.2 Restrict Construction Activities. Restrict construction activities in the vicinity of sensitive receptors during the evening, early morning, and weekends and holidays.

N-2.3 Maintain Acceptable Noise Environments. Utilize any or all the following measures to maintain acceptable noise environments throughout the city:

- Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
- Provision of buffer areas and/or wide setbacks between the noise source and other development.
- Reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).
- Use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
- Designation of appropriate land uses adjacent to known noise sources.

City of Palmdale Noise Ordinance

Construction activities are subject to Chapter 8.28 of the City's Noise Ordinance, which specifically prohibits construction or repair work on any Sunday, or any other day after 8:00 p.m. or before 6:30 a.m., in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park.

3 Existing Conditions

3.1 Noise Measurement Surveys

Sound pressure level (SPL) measurements were conducted near the proposed project site on January 29, 2025, to quantify and characterize the existing outdoor ambient sound levels.

Table 2 provides the location and time period at which these baseline noise level measurements were performed by an attending Dudek field investigator. The noise measurements were conducted using a Rion-branded Model NL-52 sound level meter (SLM) equipped with a 0.5-inch, pre-polarized condenser microphone with pre- amplifier. The SLM meets the current American National Standards Institute standard for a Type 1 (Precision Grade) sound level meter. The accuracy of the SLM was verified using a field calibrator before and after the measurements, and the measurements were conducted with the microphone positioned approximately 5 feet above the ground.

Four (4) short-term (ST) noise level measurement locations (ST1–ST4) that represent existing noise-sensitive receivers were selected on and near the proposed project site. These locations are depicted as receivers ST1–ST4 on Figure 4. The measured L_{eq} and L_{max} noise levels are provided in Table 2. The primary noise sources at the sites identified in Table 2 consisted of traffic along adjacent roadways, distant conservations, birdsong, landscaping noise, and rustling leaves. As shown in Table 2, the measured daytime SPL ranged from 70.8 dBA L_{eq} at ST3 to 72.2 dBA L_{eq} at ST4. Beyond the summarized information presented in Table 2, detailed noise measurement data is included in Appendix A.

Table 2. Measured Baseline Outdoor Ambient Noise Levels

Site	Location/Address	Time	L_{eq} (dBA)	L_{max} (dBA)
ST1	South of Rancho Vista Blvd., west of 3rd St.; adjacent to the backyard of the single-family residence at 257 Pictorial St.	12:26 p.m. to 12:41 p.m.	72.0	89.2
ST2	South of Rancho Vista Blvd. and west of Sierra Hwy.; adjacent to The Pool Boss	12:48 p.m. to 1:03 p.m.	71.5	94.8
ST3	Approximately 480 feet north of Rancho Vista Blvd. and east of Division St.	1:11 p.m. to 1:26 p.m.	70.8	91.1
ST4	South of Fantasy St. and west of Division St.; adjacent to the single-family residence at 102 Fantasy St.	1:29 p.m. to 1:44 p.m.	72.2	90.5

Source: Appendix A.
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); L_{max} = maximum sound level during the measurement interval; dBA = A-weighted decibels; ST = short-term noise measurement locations.

Generally, the measured samples of daytime L_{eq} agree with expectations: all measured L_{eq} values are above 70 dBA due largely to their proximity to the local roadways.

3.2 Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would be considered noise and vibration sensitive and may warrant unique measures for protection from intruding noise.

The closest sensitive receptors in the vicinity of the project site are the nearest existing residences located as close as 45 feet from off-site improvements related to project construction (see Figure 5) Distances from the loading docks to sensitive receptors are further, ranging from 460’ on the south side, to 620’ on the north side.

4 Thresholds of Significance

The following significance criteria are based on Appendix G of the California Environmental Quality Act Guidelines (14 CCR 15000 et seq.) and will be used to determine the significance of potential noise and vibration impacts. Impacts associated with noise and vibration would be significant if the proposed project would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive ground-borne vibration or ground-borne noise levels.
- Exposing people residing or working in the project area to excessive noise levels (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 2 miles of a public airport or public use airport).

In light of these above significance criteria, this analysis uses the following standards to evaluate potential noise and vibration impacts.

- Construction noise –The apparent proximity of existing residential receptors located west of Division Street suggests that Project-related construction to receiver distances are a minimum of approximately 45 feet. Additionally, most construction equipment and vehicles on a project site do not operate continuously. Therefore, consistent with the FTA guidance mentioned in Section 2 (Regulatory Setting), this analysis will use 80 dBA L_{eq} over an 8-hour period as the construction noise impact criterion during daytime hours (7:00 a.m. to 7:00 p.m.).
- Off-site project-attributed transportation noise – For purposes of this analysis, a noise impact due to transportation noise would be considered significant if predicted noise levels exceeded the FICON thresholds noted in Section 2.1.2. More specifically, an impact due to the project contribution to existing and future predicted ambient noise levels would be considered significant if it meets the following criteria:
  - Outdoor ambient sound level without the project is less than 60 dBA L_{dn}, then a project-attributed increase of 5 dBA or more would be considered significant;
  - Outdoor ambient sound level without the project is between 60 and 65 dBA L_{dn}, project-attributed increase of 3 dBA or more would be considered significant; and
  - Outdoor ambient sound level without the project is greater than 65 dBA L_{dn}, then project-attributed increase of 1.5 dBA or more would be considered significant.
- Off-site project-attributed stationary noise – For purposes of this analysis, a noise impact would be considered significant if noise from typical operation of heating, ventilation, and air conditioning (HVAC), truck movements, and other electro-mechanical systems associated with the proposed project exceeded 75 dBA L_{dn} at the property line. Note that these are the City's thresholds for the industrial zones that characterize the proposed project site. For residential land uses near the project site, a noise impact would be considered significant if noise from typical operations exceeds 60 dBA L_{dn} at the property line.
- Construction vibration – Guidance from Caltrans indicates that a vibration velocity level of 0.2 ips PPV received at a structure would be considered annoying by occupants within (Caltrans 2013). As for the

receiving structure itself, aforementioned Caltrans guidance from Section 2 recommends that a vibration level of 0.3 ips PPV would represent the threshold for building damage risk.

5 Impact Discussion

Potential noise and vibration impacts attributed to project construction and operation are studied in the following subsections that are categorized by the CEQA Guidelines Appendix G significance for noise.

a) 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 standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Short-Term On-Site Construction Noise

Less Than Significant. Construction noise and vibration are temporary phenomena, with emission levels varying from hour to hour and day to day, depending on the equipment in use, the operations performed, and the distance between the source and receptor. Equipment that would be in use during construction would include, in part, graders, backhoes, rubber-tired dozers, loaders, cranes, forklifts, pavers, rollers, and air compressors. The typical maximum noise levels at a distance of 50 feet from various pieces of construction equipment and activities anticipated for use on the proposed project site are presented in Table 3. Note that the equipment noise levels presented in Table 3 are maximum noise levels. Usually, construction equipment operates in alternating cycles of full power and low power, producing average noise levels over time that are less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of construction activities during that time.

Table 3. Typical Construction Equipment Maximum Noise Levels

Equipment Type	Typical Equipment (L_{max}, dBA at 50 Feet)
Backhoe	78
Compressor (air)	78
Concrete Saw	90
Crane	81
Dozer	82
Excavator	81
Flat Bed Truck	74
Front End Loader	79
Generator	72
Grader	85
Man Lift	75
Paver	77
Roller	80
Scraper	84
Welder / Torch	73
All Other Equipment > 5 HP	85

Source: DOT 2006.
Note: L_{max} = maximum sound level; dBA = A-weighted decibels.

Aggregate noise emission from proposed project construction activities, broken down by sequential phase, was predicted at the nearest existing noise-sensitive receptor from the nearest position of the construction activity boundary for a given phase. The intent of the "nearest receptor" methodology is to help evaluate anticipated construction noise from all construction equipment or vehicle activity expected to be at the boundary for some period of time. The construction equipment anticipated for development of the project, including site preparation, grading, off-site improvements, building construction, on-site concrete, and architectural coating, was provided by the project Applicant.

Table 4 summarizes the distances to the apparent closest noise-sensitive receptor for each of the five sequential construction phases. At the construction activity boundary, this analysis assumes that one piece of equipment for each listed type (i.e. if there are multiple pieces of the same type of equipment in a given phase, only one piece was used to avoid unrealistic equipment "stacking" at a single location) per phase will be involved in the construction activity for the full 8-hour period.

Table 4. Estimated Distances between Construction Activities and the Nearest Noise-sensitive Receptors

Construction Phase (and Equipment Types Involved)	Distance from Nearest Noise-Sensitive Receptor to Construction Phase Boundary (Feet)
Site Preparation (dozer, tractor, front end loader)	135
Grading (excavator, grader, dozer, scraper, backhoe, trencher[1])	135
Off-Site Improvements (paver, pavement scarifier, roller, trencher[1])	45
Building Construction (crane, man-lift, generator, backhoe, concrete mixer truck, welder/torch, concrete mixer truck)	400
On-Site Concrete (paver, pavement scarifier, concrete mixer truck, roller, other construction equipment, surfacing equipment[2])	185
Architectural Coating (air compressor, man-lift)	400

* Measured distance is from property line of the noise-sensitive receptor to project-related construction activities concerning the reconfiguration of adjacent roadways.
1 Trencher data are not available in RCNM and were replaced by an excavator.
2 Surfacing equipment data are not available in RCNM and were replaced by a paver.

A Microsoft Excel–based noise prediction model emulating and using reference data from the Federal Highway Administration Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest occupied noise-sensitive land use. Although the RCNM was funded and promulgated by the Federal Highway Administration, it is often used for non-roadway projects, because the same types of construction equipment used for roadway projects are often used for other types of construction. Input variables for the predictive modeling consist of the equipment type and number of each (e.g., a grader, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of time within a specific time period, such as an hour, when the equipment is expected to operate at full power or capacity and thus make noise at a level comparable to what is presented in Table 3), and the distance from the noise-sensitive receiver. The predictive model also considers how many hours that equipment may be on-site and operating (or idling) within an established work shift. Conservatively, no topographical shielding was assumed in the modeling. Additional noise reduction from the residential walls was

applied to the predicted levels. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis, which is detailed in Appendix B, and produced the predicted results displayed in Table 5.

Table 5. Predicted Construction Noise Levels per Activity Phase

Construction Phase	8-Hour L_{eq} at Nearest Noise-Sensitive Receptor to Construction Phase Boundary (dBA)
Site Preparation	62.2
Grading	65.4
Off-Site Improvements	72.5
Building Construction	49.4
On-Site Concrete	61.6
Architectural Coating	44.2

Notes: L_{eq} = equivalent noise level; dBA = A-weighted decibels.

Although noise from construction would be exempt from the City's noise standard during the specified hours (6:30 a.m. to 8:00 p.m.), to be consistent with CEQA expectations regarding "applicable standards of other agencies" the City has previously adopted quantified construction noise thresholds per Federal Transit Administration (FTA) guidance, which recommends 80 dBA 8-hour L_{eq} at the exterior of a residence during daytime hours, and 70 dBA 8-hour L_{eq} during nighttime hours (FTA 2018). As presented in Table 5, the highest estimated construction noise levels are predicted to stay below 73 dBA L_{eq} over an 8-hour period at the nearest existing residences (located west of the project site) when off-site improvement activities take place. Residences further afield, such as those to the south of the project site, would be predicted to have lower construction noise levels than those shown in Table 5. Additionally, the existing noise environment at the nearest existing residences to the south is dominated by traffic noise from Rancho Vista Boulevard. A concurrent phase analysis was also conducted to analyze potential overlapping site preparation and grading phases over an 8-hour period at the nearest existing residences described above and predicted noise levels were found to be below 73 dBA L_{eq}.

On-site concrete pouring activities may occur during nighttime hours, which are subject to the FTA nighttime threshold of 70 dBA L_{eq} over an 8-hour period. As presented in Table 5, noise levels for concrete pouring activities are predicted to stay below 62 dBA L_{eq} over an 8-hour period, which is below the FTA nighttime threshold of 70 dBA L_{eq} over an 8-hour period.

As a result, short-term construction noise is predicted to be below the FTA guidance of 80 dBA L_{eq} over an 8-hour period during daytime hours and 70 dBA L_{eq} over an 8-hour period during nighttime hours (for on-site concrete activities) and therefore is less than significant. The significance of the magnitude of an ambient noise level increase resulting from project construction activity is inherently evaluated by application of these recommended FTA standards, since they presume there is some pre-existing outdoor ambient sound level (such as the measured samples appearing in Table 2) to which project construction noise would add and result in a future noise level. FTA guidance expects nighttime construction noise (70 dBA 8-hour L_{eq}) to be 10 dB more stringent than the daytime threshold (80 dBA 8-hour L_{eq}). Therefore, these FTA fixed-value construction noise limits account for typical ambient noise levels associated with each studied receptor location such that an outdoor ambient noise level increase that exceeds these limits would be considered a substantial increase above ambient noise levels and therefore a significant impact.

Table 5 indicates that all listed project construction activities would be compliant with the FTA daytime threshold of 80 dBA 8-hour L_{eq} and would result in increases ranging from 1 to 2 dBA over the existing outdoor ambient sound level when compared with daytime samples appearing in Table 2, Therefore, construction activities do not result in a significant increase over ambient levels and would be considered a less than significant impact.

Best Practices for Limiting Construction Noise

Despite the construction noise analysis above showing that the impact to noise-sensitive receivers would be less than significant, the following is a list of best practices for limiting construction noise that should be implemented by the contractor:

- The project contractor shall, to the extent feasible, schedule construction activities to avoid concurrent operation of several pieces of construction equipment at the nearest distance to an offsite noise-sensitive receptor.
- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- Construction noise reduction methods such as shutting off idling equipment, maximizing the distance between construction equipment staging areas and adjacent residences, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the City receives a complaint, appropriate corrective actions shall be implemented by the contractor, and a report of the action provided to the reporting party.

Short-Term Off-Site Construction Noise

Less Than Significant. The project would result in local, short-term increases in roadway noise as a result of construction traffic. Based on information developed as part of the project's air quality analysis, project-related traffic would include workers commuting to and from the project site as well as vendor and haul trucks bringing or removing materials. The highest number of average daily construction-related trips to and from the project site for all of construction phases would be 40 one-way worker trips, 30 one-way vendor trips, and 30 one-way haul truck trips (for a passenger car equivalent [PCE] of 400 total roundtrips) occurring during the building construction phase.

Based upon the project Traffic Impact Analysis (TIA), the existing PM peak hour volume on Division Street is 387 vehicles, which is approximately 3,870 vehicles per day when adjusted to an Average Daily Traffic (ADT) volume using a k-factor of 10. Comparing the maximum number of daily construction-related trips (a total of 200 roundtrips and an adjusted PCE total of 400 roundtrips) to the Division Street ADT volume of 3,870 PCE trips, the additional vehicle trips would amount to a worst-case number of trips due to project construction.

Comparing the maximum number of daily construction-related trips with the average daily traffic volume, the additional vehicle trips would amount to an increase of approximately 10%. Based upon the fundamentals of acoustics, a doubling (i.e., a 100% increase) would be needed to result in a 3-dB increase in noise levels, which is the level corresponding to an audible change to the typical human listener. Therefore, traffic related to construction activities would not result in a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable

standards of other agencies. Impacts from project-related construction traffic noise would be **less than significant.** No mitigation measures are required.

Long-Term Operational Noise

Off-Site Traffic Noise Exposure

The project is expected to generate an additional 2,093 average daily trips to the roadway system, as shown in Table A of the project's TIA. During the afternoon (PM) peak-hour (the highest of the AM and PM peak hours), approximately 107 vehicles are estimated to enter or exit the project site, with a mix of 91 passenger cars, four 2-axle trucks, three 3-axle trucks, and nine 4+ axle trucks. Utilizing this information as well as additional traffic data provided in Appendix C of this technical report, the Federal Highway Administration Traffic Noise Model 2.5 (TNM) was used to predict noise exposure levels at multiple representative sensitive receptor positions adjacent to the project site. Two separate modeling scenarios exist for each opening year condition. The "Without Grade Separation" models assume that Sierra Highway would remain as-is, with an at grade crossing at the intersection with Rancho Vista Boulevard. The "With Grade Separation" models assume that Sierra Highway would be slightly re-routed to pass over Rancho Vista Boulevard on an elevated structure. The following scenarios were modeled for the traffic noise analysis:

- Existing Year 2024;
- Opening Year 2027 Without Project and Without Grade Separation;
- Opening Year 2027 With Project and Without Grade Separation;
- Opening Year 2027 Without Project and With Grade Separation; and
- Opening Year 2027 With Project and With Grade Separation.

Input data for the TNM modeling included peak hour volumes, vehicle speeds, vehicle class, and truck percentages. Peak hour volumes for project roadways were provided in the project TIA. The future modeled traffic speed was assumed to be the anticipated speed limit for the studied future roads, which is 55 miles per hour (mph) for all studied roadways. The truck percentages used in the existing and "without project" noise model scenarios were 1.5% medium trucks and 2.3% heavy trucks. This truck mix is based on 2022 annual average daily truck traffic data on SR-14 from the Caltrans Traffic Census Program (Caltrans 2022). The truck percentages used in the "with project" noise model scenarios were calculated by adding the existing roadway traffic volume mixes using the existing truck percentage mix (1.5% medium trucks and 2.3% heavy trucks) to the mix described above (91 passenger cars, 4 2-axle trucks, 3 3-axle trucks, and 9 4+ axle trucks). Therefore, truck percentages used for individual "with project" roadways in the "with project" modeled scenarios varied. All truck percentages used in the analysis can be found in Appendix C.

As part of the CNEL calculation process, the peak hour volume was used and is generally considered to be roughly equivalent to the worst-case hourly traffic volume; hence, using this input value in the noise model results in an average hourly equivalent noise level approximately equal to the CNEL. Thus, this relationship results in a CNEL value that is representative of traffic noise resulting from typical daytime, evening and nighttime traffic distribution.

Table 6 shows existing year 2024, opening year 2027 without project and without grade separation, opening year 2027 with project and without grade separation, opening year 2027 without project and with grade separation, and opening year 2027 with project and with grade separation predicted noise levels at noise-sensitive receptors adjacent to the project site. Figure 5 displays the modeled prediction locations of the noise-sensitive receptors described in Table 6.

Table 6. Predicted Future Year Traffic Noise Levels

Receiver ID	Description	Predicted Noise Level, $L_{eq(1h)}$ dBA								
		Existing	Opening Year 2027 No Project, No Grade Separation	Opening Year 2027 With Project, No Grade Separation	Opening Year 2027 No Project, With Grade Separation	Opening Year 2027 With Project, With Grade Separation	Delta (Existing – Opening Year 2027 With Project, No Grade Separation)	Delta (Existing – Opening Year 2027 With Project, With Grade Separation)	Delta (Opening Year 2027 No Project, No Grade Separation – Opening Year 2027 With Project, No Grade Separation)	Delta (Opening Year 2027 No Project, With Grade Separation – Opening Year 2027 With Project, With Grade Separation)
R01	In the backyard of the single-family residence at 39878 Marbrissa Ave.	56	56	59	56	59	3	3	3	3
R02	In the backyard of the single-family residence at 102 Fantasy St.	57	57	61	57	61	4	4	4	4
R03	In the backyard of the single-family residence at 135 Pictorial St.	63	63	64	62	63	1	0	1	1

Table 6. Predicted Future Year Traffic Noise Levels

Receiver ID	Description	Predicted Noise Level, $L_{eq(1h)}$ dBA								
		Existing	Opening Year 2027 No Project, No Grade Separation	Opening Year 2027 With Project, No Grade Separation	Opening Year 2027 No Project, With Grade Separation	Opening Year 2027 With Project, With Grade Separation	Delta (Existing – Opening Year 2027 With Project, No Grade Separation)	Delta (Existing – Opening Year 2027 With Project, With Grade Separation)	Delta (Opening Year 2027 No Project, No Grade Separation – Opening Year 2027 With Project, No Grade Separation)	Delta (Opening Year 2027 No Project, With Grade Separation – Opening Year 2027 With Project, With Grade Separation)
R04	In the backyard of the single-family residence at 275 Pictorial St.	63	63	64	59	60	1	-3	1	1

Source: Appendix C

Based upon the FICON thresholds presented in Section 2.1.2 above, an increase of equal to or less than 5 dBA when the ambient sound level is less than 60 dBA L_{dn}/CNEL, equal to or less than 3 dBA when the ambient sound level is between 60 and 65 dBA L_{dn}/CNEL, or equal to or less than 1.5 dBA when the ambient sound level is greater than 65 dBA L_{dn}/CNEL would not be substantial. As shown in Table 6, the predicted increase is less than the 5 dBA FICON threshold when the ambient noise level is below 60 L_{dn}/CNEL (such as in the cases of R01 and R02) and less than the 3 dBA FICON threshold when the ambient noise level is between 60 and 65 dBA L_{dn}/CNEL (such as in the cases of R03 and R04). In addition, no location would exceed 65 dBA L_{dn}, the acceptable transportation noise level set by the General Plan Noise Element. Therefore, potential impacts at existing off-site noise-sensitive land uses closest to the project with respect to project-generated changes to future traffic noise would be **less than significant.**

Project Sound Sources

On-site Outdoor Mechanical Equipment

The completion of the building will add a variety of noise-producing mechanical equipment that include those presented and discussed in the following paragraphs. Most of these noise-producing equipment or sound sources would be considered stationary or limited in mobility to a defined area.

Prediction Method and Parameters

The aggregate noise emission from these outdoor-exposed sound sources has been predicted with the Datakustik CadnaA sound propagation program. CadnaA is a commercially available software program for the calculation, presentation, assessment, and prediction of environmental noise based on algorithms and reference data per International Organization of Standardization (ISO) Standard 9613-2, "Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation" (ISO 1996). The CadnaA computer software allows one to position sources of sound emission in a simulated three-dimensional (3-D) space having heights and footprints consistent with project architectural plans and elevations. In addition to the above-mentioned sound source inputs and building-block structures that define the three-dimensional sound propagation model space, the following assumptions and parameters are included in this CadnaA-supported stationary noise source assessment:

- Ground effect acoustical absorption coefficient equal to 0.7, which intends to represent an average or blending of ground covers that are characterized largely by high desert landscapes and existing building surfaces across the project site and the surroundings;
- Reflection order of 1, which allows for a single reflection of sound paths on encountered structural surfaces such as the modeled building masses;
- Off-site residential buildings have not been rendered in the model;
- Seven-foot tall barriers were modeled to represent off-site residential barriers;
- Calm meteorological conditions (i.e., no wind) with 68 degrees Fahrenheit and 50% relative humidity; and
- All of the modeled noise sources are operating concurrently and continuously for a minimum period of 1 hour.

Based on the available plans and other design information, the proposed project building would be served by roof-mounted air-conditioning equipment that includes outdoor-exposed packaged air-handling units and air-cooled condensers (ACC) that provide the expected cooling demand (expressed as refrigeration "tonnage") for a building. The following are descriptions of modeled sound sources, with Table 7 exhibiting modeled sound power level (PWL)

data at octave-band center frequency (OBCF) resolution. Detailed information supporting these summary descriptions and quantities appear in Appendix D.

Table 7. Modeled Sound Power Levels (PWL) for Stationary Sources (HVAC)

Sound Source	Overall L_{eq} (dBA)	A-Weighted dB at Octave Band Center Frequency (OBCF, Hz)								
		32.5	63	125	250	500	1000	2000	4000	8000
Warehouse Air Handling Unit(s)	101	82	82	94	95	96	93	86	80	75
Office Air Handling Unit(s)	89	70	70	82	83	84	81	74	68	63
Warehouse Air Conditioning	102	78	78	85	92	96	95	95	93	84
Office Air Conditioning	75	46	46	59	65	73	73	68	66	59
Cold Storage (outdoor exposed condensing units)	101	73	73	86	90	97	94	92	90	83

The HVAC reference sound levels were calculated from a combination of inputs that include square footage values for the proposed project's proposed office spaces, project applicant response to data requests, and manufacturer sound power level data. For the analysis of noise from HVAC equipment operation, eight air conditioning units were modeled on the roof deck of the project building.

Other Stationary Noise Sources

The proposed project building may feature other noise emitters, but their contributions would tend to be sporadic or otherwise occur infrequently and thus be expected to have no greater acoustic contribution to an hourly L_{eq} than the continuous-type HVAC noise studied herein.

Loading Dock Noise Sources

The proposed project building also features loading dock areas for the loading and unloading of heavy trucks. Onsite loading dock noise was calculated for a single heavy truck pass by (Salter 2014) and extrapolated based upon the number of heavy trucks entering or exiting the facility during the peak hour, as found in the project TIA. Backup alarms are also included in the truck noise level calculations. Loading dock data were subsequently entered into the CadnaA model for the prediction of stationary operations noise levels. Detailed information supporting the calculation of daytime and nighttime loading dock noise can be found in Appendix D.

Prediction Results

An operational scenario of the proposed project was modeled that assumes all the HVAC equipment is operating simultaneously for a minimum period of one hour along with peak hour truck movements in the loading dock areas. Figure 6, Predicted Onsite Operation Noise Contours, displays the predicted noise contours associated with aggregate sound propagation from operating HVAC and peak hour loading dock sound sources.

Figure 6 illustrates predicted aggregate SPL propagation solely from operation of the proposed project stationary sound sources as described herein. The color-coded annular bands of SPL are calculated across a field parallel with and five (5) feet above local grade.

Based on the noise level contours appearing in Figures 6, the proposed project is predicted to be up to 43 dBA L_{eq} at peak operation, with a calculated L_{dn} of 49 dBA at the nearest residential land uses and is therefore expected to be lower than and thus comply with the City's 60 dBA L_{dn} threshold for residential land uses.

On-site Parking Activity

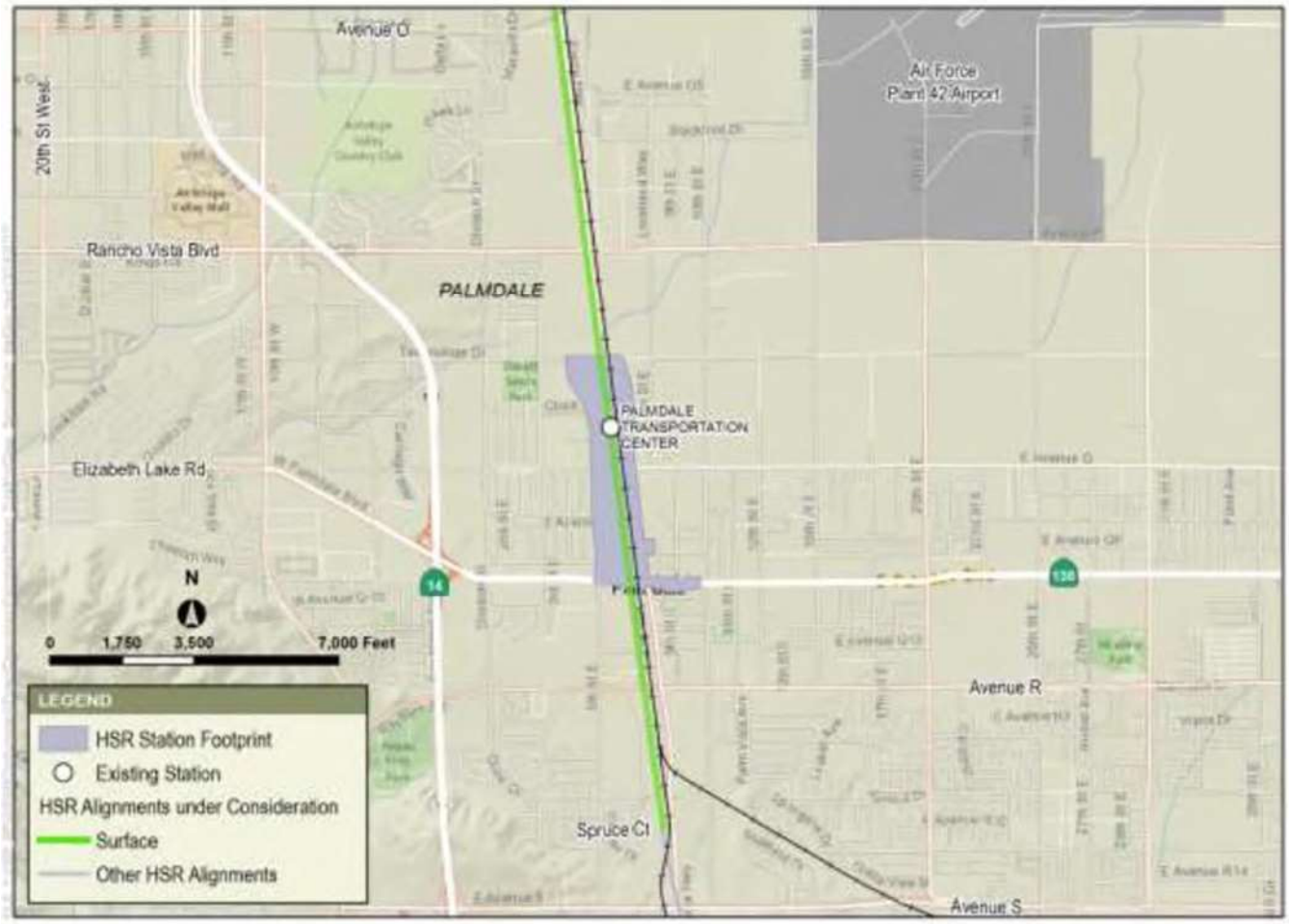
Less Than Significant Impact. A comprehensive study of noise levels associated with surface parking lots was published in the Journal of Environmental Engineering and Landscape Management (Baltrënas et al. 2004). The study found that average noise levels for parking lots of similar sizes during the peak period of use of the parking lot (generally in the morning with arrival of commuters, and in the evening with the departure of commuters), was 47 dBA L_{eq} at 1 meter (3.28 feet) from the outside boundary of the parking lot. The parking areas would function as point sources for noise, which means that noise would attenuate at a rate of 6 dBA with each doubling of distance. Employee parking spaces are proposed to be distributed throughout the project site adjacent to the warehouse/office building, no closer than 155 feet from the edge of the closest parking space to the property lines of the nearest residences to the west. At a distance of 155 feet, parking space noise levels would not be audible to the human ear at the property lines of the nearest residences. The combination of the parking space noise (<14 dBA L_{eq}) and the predicted stationary operation level (43 dBA L_{eq} at the nearest receptor) would be 43 dBA L_{eq}[1], which would be well below the applicable limits (i.e. 60 dBA L_{dn} for residential receptors). Therefore, impacts associated with parking noise would be less than significant.

High-Speed Rail and Project Noise Sources Cumulative Analysis

Less than significant. The addition of the high-speed rail (HSR), approximately 150 feet to the east of the project site, was considered for potential cumulative impacts due to the combined project noise sources (i.e. operations noise and future traffic with project trips noise) and rail noise from the HSR. Rail noise levels at modeled receiver locations (as shown in Figure 5) were calculated using the FRA HSR Noise Spreadsheet Model (FRA 2012). Inputs used in the FRA HSR Spreadsheet Model were taken from Table 6-17 in the Draft Noise and Vibration Technical Report for the Bakersfield to Palmdale Project Section of the HSR project (California High-Speed Rail Authority, 2018) with the exception of the maximum speed. Due to the proximity to the proposed Palmdale HSR Station (approximately 0.7 miles), a speed of 190 mph was used, which is extremely conservative. Available data from the Japanese Shinkansen N700 high-speed train (Wikipedia, 2025) indicates that reaching the maximum design speed of 190 mph would require approximately 4.2 miles of track. To decelerate from the maximum design speed of 190 mph, approximately 3 miles of track would be required.

Exhibit III displays the proposed location of the future HSR alignment. Table 8 displays the predicted L_{dn} for cumulative project noise (i.e. operations noise and future with project traffic noise as previously discussed), the predicted L_{dn} for the future HSR, and the predicted L_{dn} for the cumulative project and HSR noise sources. Appendix E contains the HSR Noise Model Worksheets, which show the inputs used for the analysis.

1 Because noise levels are summed in the energy (that is, the logarithmic) domain, a noise level that is 10 decibels or more lower than another noise level becomes negligible, because the sound energy from the higher noise source is completely dominant.



Source; Figure 2-23 from the California High-Speed Rail Authority, Bakersfield to Palmdale Project Section; Revised Draft Noise and Vibration Technical Report (2018)
Exhibit III; Proposed HSR Alignment

Table 8. Predicted Project Plus High-Speed Rail Cumulative Noise Levels

Receiver ID	Predicted Noise Level, L_{dn} dBA								Potential Impact Level
	Project Operations	Opening Year 2027 Roadway Traffic - With Project, No Grade Separation	Opening Year 2027 Roadway Traffic - With Project, With Grade Separation	Combined Project Project Operations + Roadway Traffic (With Project, No Grade Separation)	Combined Project Project Operations + Roadway Traffic (With Project, With Grade Separation)	HSR Only (and distance to proposed HSR near track centerline in feet)	Cumulative Combined Project Operations and Roadway Traffic (With Project, No Grade Separation) + HSR	Cumulative Combined Project Operations and Roadway Traffic (With Project, With Grade Separation) + HSR	
R01	44	59	59	59	59	55 (2,510)	60	60	None
R02	46	61	61	61	61	55 (2,550)	62	62	None
R03	48	64	63	64	63	51 (2,320)	64	63	None
R04	49	64	60	64	60	54 (1,400)	64	61	None

Source: Appendix E

As shown in Table 8, the cumulative project noise and rail noise levels were predicted to be lower than the FRA threshold at all receiver locations. Therefore, receivers near the project site would be expected to be in the "No Impact" range and impacts due to the cumulative effects of project noise and HSR noise would be considered **less than significant.**

b) Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels?

Less Than Significant Impact. Construction activities may expose persons to excessive ground-borne vibration or ground-borne noise, causing a potentially significant impact. Caltrans has collected ground-borne vibration information related to construction activities (Caltrans 2020). Information from Caltrans indicates that continuous vibrations with a PPV of approximately 0.2 ips is considered annoying. For context, heavier pieces of construction equipment, such as a roller that may be expected on the project site, have peak particle velocities of approximately 0.21 ips or less at a reference distance of 25 feet (FTA 2018).

Ground-borne vibration attenuates rapidly, even over short distances. The attenuation of ground-borne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. By way of example, for a roller operating on-site and as close as the western project boundary (i.e., 45 feet from the nearest occupied property), the estimated vibration velocity would be 0.087 ips per the equation as follows (FTA 2018):

$PPV_{rcvr} = PPV_{ref} * (25/D)^{1.5} = 0.087 = 0.21 * (25/45)^{1.5}$

In the above equation, PPV_{rcvr} is the predicted vibration velocity at the receiver position, PPV_{ref} is the reference value at 25 feet from the vibration source (the roller), and D is the actual horizontal distance to the receiver. Therefore, at this predicted PPV, the impact of vibration-induced annoyance to occupants of nearby existing homes would be less than significant.

Construction vibration, at sufficiently high levels, can also present a building damage risk. However, anticipated construction vibration associated with the proposed project would yield a maximum amplitude of 0.087 ips, which does not surpass the guidance limit of 0.2 to 0.3 ips PPV for preventing damage to residential structures (Caltrans 2020). Because the predicted vibration level at 45 feet is less than this guidance limit, the risk of vibration damage to nearby structures is considered less than significant.

Once operational, the proposed project would not be expected to feature major producers of ground-borne vibration. Anticipated mechanical systems like heating, ventilation, and air-conditioning units are designed and manufactured to feature rotating (fans, motors) and reciprocating (compressors) components that are well-balanced with isolated vibration within or external to the equipment casings. On this basis, potential vibration impacts due to proposed project operation would be **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 closest airport to the proposed project site is the Palmdale Regional Airport, approximately 1.6 miles east of the project boundary. According to Figure 16.2 of the City of Palmdale General Plan Noise Element, the project falls outside of the 65 dBA CNEL contour. As shown in the AICUZ's Final Report's Figure 3-3, Air Force Plant 42

–Community Noise Equivalent Level (CNEL), a small portion of the southeastern portion of the project site consisting of industrial land uses is located within the 60-65 dBA CNEL aircraft noise level contour boundaries. Therefore, impacts would be **less than significant.**

6 Summary of Findings

This noise analysis was conducted for the proposed project. The results indicate that potential impacts during construction would **be less than significant**; nevertheless, best practices that incorporate construction noise reduction techniques would be incorporated into the project construction process. Noise impacts due to operation of the proposed project (including traffic noise) would be **less than significant.** No noise and vibration mitigation measures are anticipated at this time.

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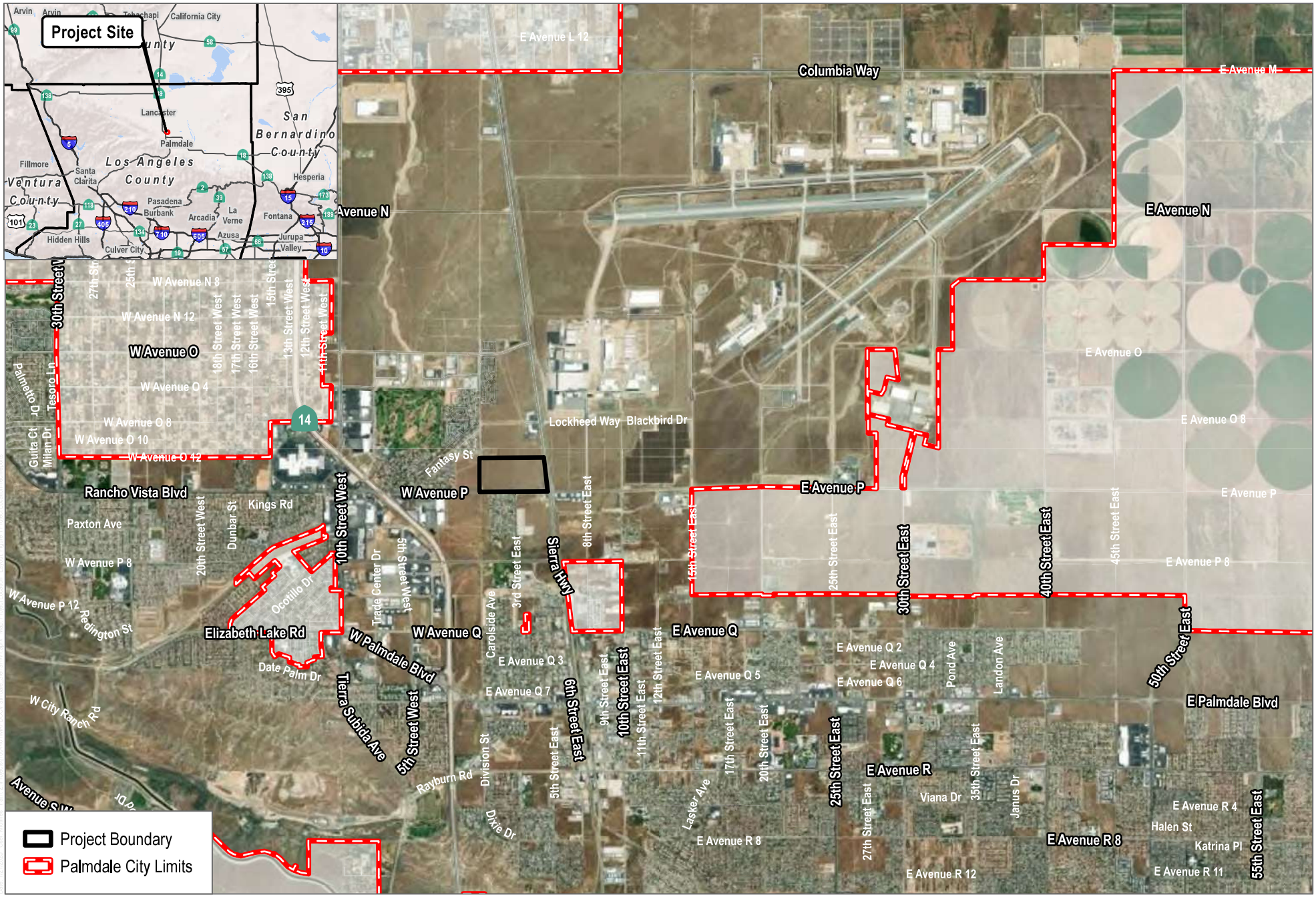
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SOURCE: USGS 7.5 minute Series

Ritter Ridge & Palmdale Quadrangle - Township 6N Range 12W Section 14 & 15

DUDEK

0 2,500 5,000 Feet

0 500 1,000 Meters

FIGURE 1

Project Location

Pacific Palmdale Center Project



SOURCE: World Imagery 2022

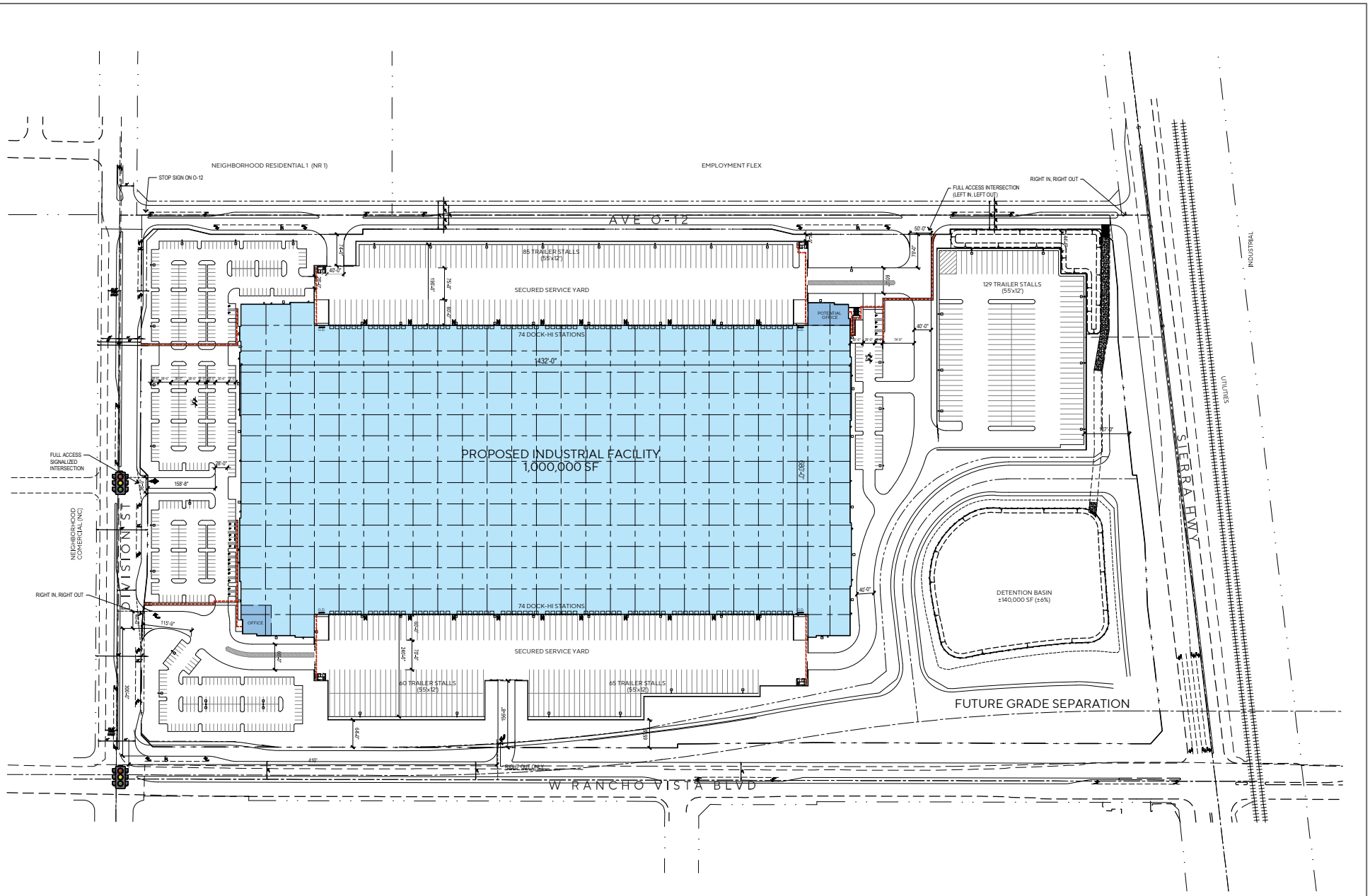
DUDEK

0 210 420 Feet

FIGURE 2

Project Site

Pacific Palmdale Center Project



SOURCE: AO Architecture 2025

DUDEK

FIGURE 3

Site Plan

Pacific Palmdale Center Project



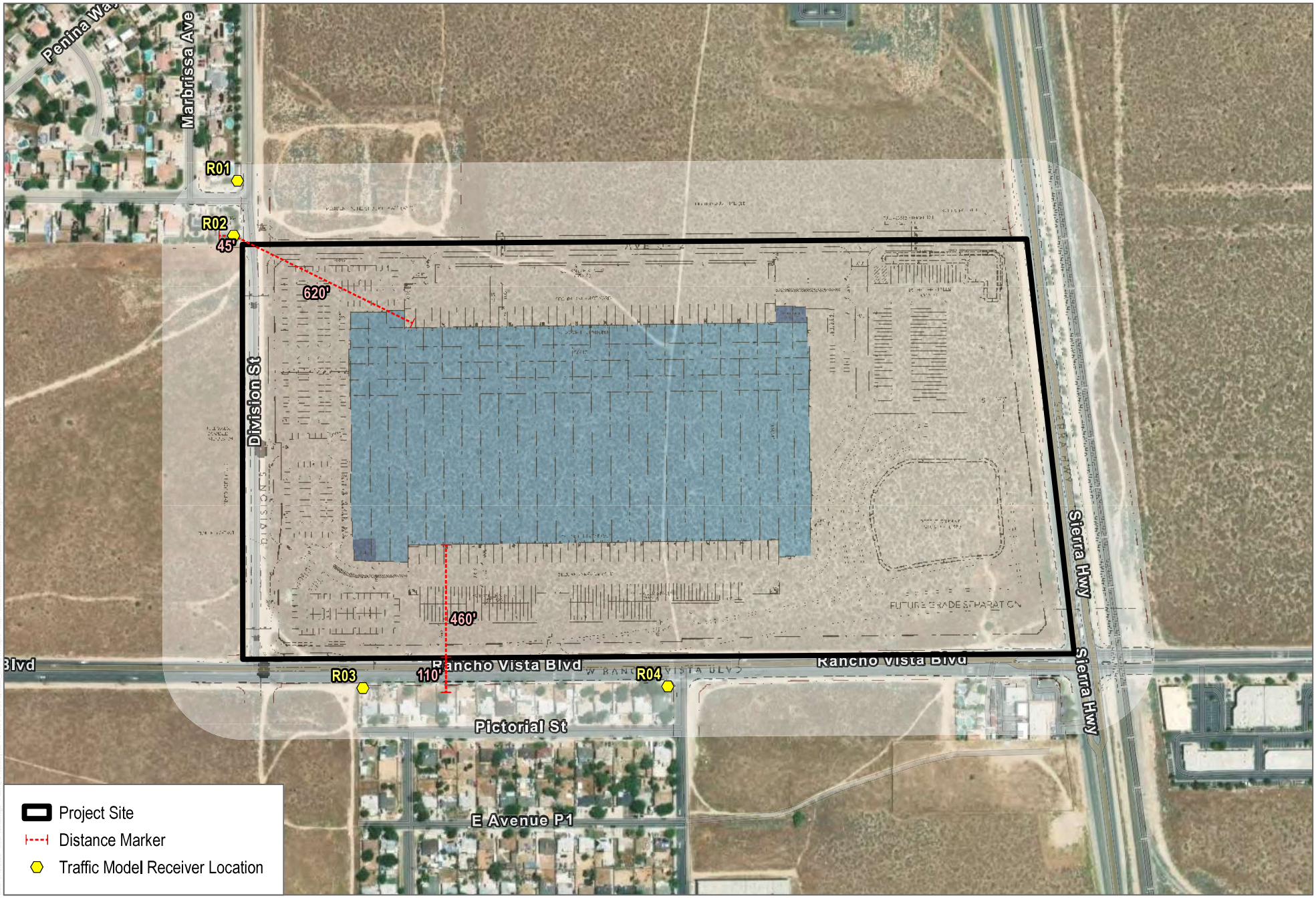
SOURCE: Google 2025; Dudek 2025

DUDEK

FIGURE 4

Noise Measurement Locations

Pacific Palmdale Center Project



SOURCE: World Imagery 2022

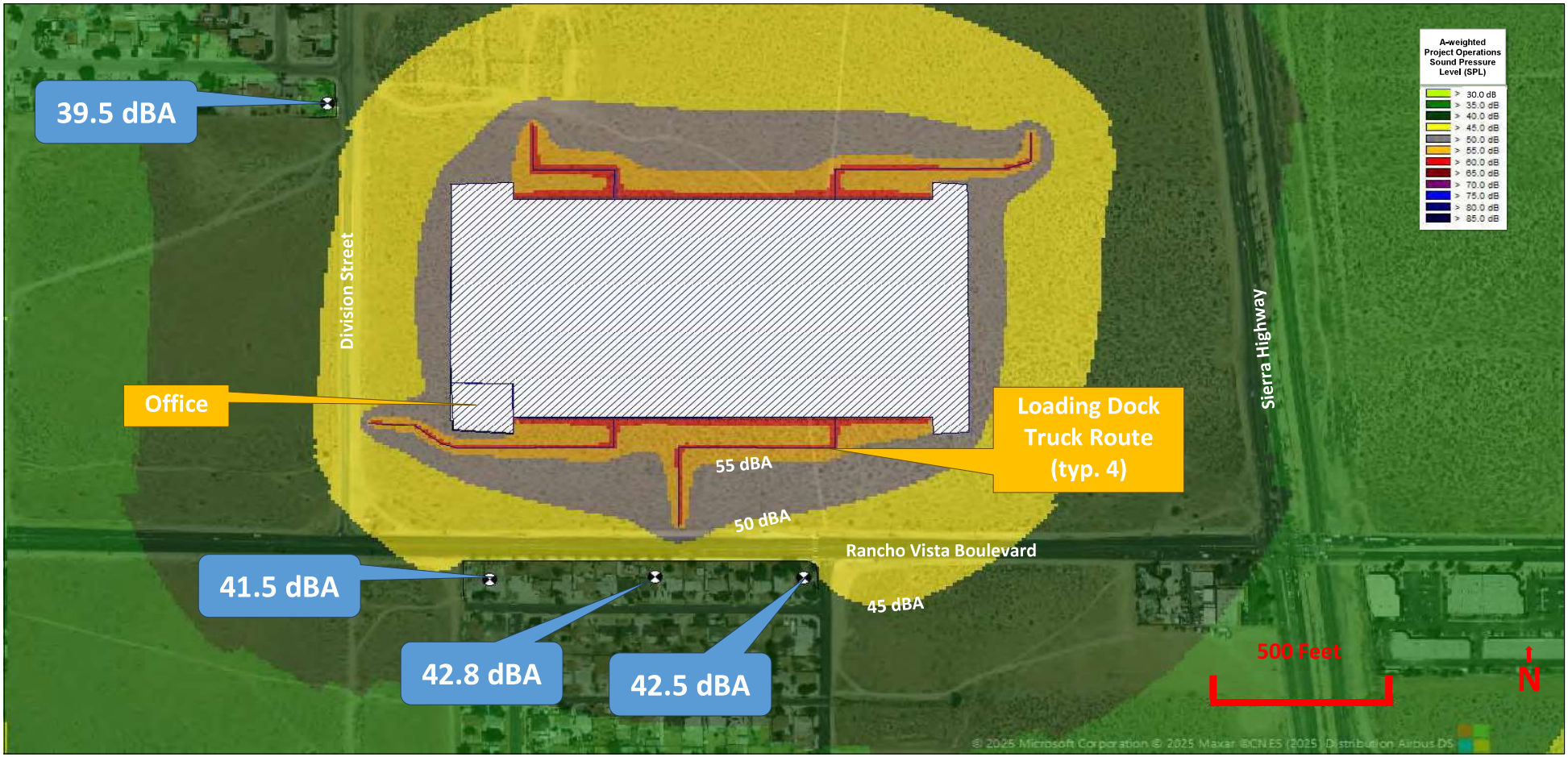
DUDEK

0 200 400 Feet

FIGURE 5

Offsite Traffic Noise Model Receiver Locations

Pacific Palmdale Center Project



R = representative offsite receiver location

SOURCE: Google 2025; Dudek 2025

DUDEK

FIGURE 6

Predicted Onsite Operation Noise Contours

Pacific Palmdale Center Project

Appendix A

Baseline Noise Measurement Field Data

FORMS FIELD DATA REPORT

Field Noise Measurement Data

Record: 2037	
Project Name	*Palmdale*
Observer(s)	
Date	*2025-01-29*

Meteorological Conditions	
Temp (F)	*60*
Humidity % (R.H.)	*49*
Wind	*Light*
Wind Speed (MPH)	*6*
Wind Direction	*South West*
Sky	*Partly Cloudy*

Instrument and Calibrator Information	
Instrument Name List	*(ENC) Rion NL-52*
Instrument Name	*(ENC) Rion NL-52*
Instrument Name Lookup Key	*(ENC) Rion NL-52*
Manufacturer	*Rion*
Model	*NL-52*
Serial Number	*553896*
Calibrator Name	*(ENC) LD CAL150*

Calibrator Name	*(ENC) LD CAL150*
Calibrator Name Lookup Key	*(ENC) LD CAL150*
Calibrator Manufacturer	*Larson Davis*
Calibrator Model	*LD CAL150*
Calibrator Serial #	*5152*
Pre-Test (dBA SPL)	*94*
Post-Test (dBA SPL)	*94*
Windscreen	*Yes*
Weighting?	*A-WTD*
Slow/Fast?	*Slow*

Monitoring	
Record #	*1*
Site ID	*ST1*
Site Location Lat/Long	*34.601676, -118.126250*
Begin (Time)	*12:26:00*
End (Time)	*12:41:00*
Leq	*72*
Lmax	*89.2*
Lmin	*46.3*
Other Lx?	*L90, L50, L10*
L90	*56*
L50	*68.2*

L10	*76*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Distant Conversations / Yelling, Distant Traffic*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*6*
Lane Width (feet)	*10*
Roadway Width (feet)	*60*
Roadway Width (m)	*18.3*
Distance to Roadway (feet)	*6*
Distance to Roadway (m)	*1.8*
Distance Measured to Centerline or Edge of Pavement?	*Edge of Pavement*
Estimated Vehicle Speed (MPH)	*0*

Traffic Counts	
Vehicle Count Summary	*A 383, MT 5, HT 1, B 0, MC 0*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*0*
Vehicle Count Tally	

Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*383*
Number of Vehicles - Medium Trucks	*5*
Number of Vehicles - Heavy Trucks	*1*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos

Site Photos

Photo	
Comments / Description	*Facing east*

Site Photos

Photo	
Comments / Description	*Facing west*

Monitoring

Record #	*2*
Site ID	*ST2*
Site Location Lat/Long	*34.601654, -118.122395*
Begin (Time)	*12:48:00*
End (Time)	*13:03:00*
Leq	*71.5*
Lmax	*94.8*
Lmin	*51.3*
Other Lx?	*L90, L50, L10*
L90	*56*

L50	*66.2*
L10	*73.3*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Traffic*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*6*
Lane Width (feet)	*10*
Roadway Width (feet)	*60*
Roadway Width (m)	*18.3*
Distance to Roadway (feet)	*7*
Distance to Roadway (m)	*2.1*
Distance Measured to Centerline or Edge of Pavement?	*Edge of Pavement*
Estimated Vehicle Speed (MPH)	*0*

Traffic Counts	
Vehicle Count Summary	*A 336, MT 4, HT 4, B 0, MC 0*
Select Method for Recording Count Duration	*Enter Manually*
Counting Both Directions?	*Yes*

Count Duration (minutes)	*0*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*336*
Number of Vehicles - Medium Trucks	*4*
Number of Vehicles - Heavy Trucks	*4*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos

Site Photos

Photo	
Comments / Description	*Facing east*

Site Photos

Photo	
Comments / Description	*Facing west*

Monitoring

Record #	*3*
Site ID	*ST3*
Site Location Lat/Long	*34.603115, -118.129854*
Begin (Time)	*13:11:00*
End (Time)	*13:26:00*
Leq	*70.8*
Lmax	*91.1*
Lmin	*44.2*
Other Lx?	*L90, L50, L10*
L90	*47.5*

L50	*59.4*
L10	*75.2*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*2*
Lane Width (feet)	*10*
Roadway Width (feet)	*20*
Roadway Width (m)	*6.1*
Distance to Roadway (feet)	*10*
Distance to Roadway (m)	*3*
Distance Measured to Centerline or Edge of Pavement?	*Edge of Pavement*
Estimated Vehicle Speed (MPH)	*0*

Traffic Counts	
Vehicle Count Summary	*A 70, MT 0, HT 0, B 0, MC 0*
Select Method for Recording Count Duration	*Enter Manually*
Counting Both Directions?	*Yes*

Count Duration (minutes)	*0*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*70*
Number of Vehicles - Medium Trucks	*0*
Number of Vehicles - Heavy Trucks	*0*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos

Site Photos

Photo	
Comments / Description	*Facing north*

Site Photos

Photo	
Comments / Description	*Facing south*

Site Photos

Photo	
Comments / Description	*Facing west*

Monitoring	
Record #	*4*
Site ID	*ST4*
Site Location Lat/Long	*34.605457, -118.130086*
Begin (Time)	*13:29:00*
End (Time)	*13:44:00*
Leq	*72.2*
Lmax	*90.5*
Lmin	*39.1*
Other Lx?	*L90, L50, L10*
L90	*47.8*
L50	*62.2*
L10	*74.5*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Gardener / Landscape Noise, Rustling Leaves*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*2*
Lane Width (feet)	*10*
Roadway Width (feet)	*20*
Roadway Width (m)	*6.1*
Distance to Roadway (feet)	*6*
Distance to Roadway (m)	*1.8*
Distance Measured to Centerline or Edge of Pavement?	*Edge of Pavement*
Estimated Vehicle Speed (MPH)	*0*

Traffic Counts	
Vehicle Count Summary	*A 64, MT 0, HT 0, B 0, MC 0*
Select Method for Recording Count Duration	*Enter Manually*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*0*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*64*
Number of Vehicles - Medium Trucks	*0*
Number of Vehicles - Heavy Trucks	*0*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos

Site Photos

Photo	
Comments / Description	*Facing south*

Site Photos

Photo	

Comments / Description	*Facing north*

Appendix B

Construction Noise Modeling Input and Output

To User: bordered cells are inputs, unbordered cells have formulae
enter "0" to turn off air or grnd absorption terms, "1" to turn on

air abs? 1
grnd abs? 1

magnitude of threshold (dBA) = 80
allowable hours over which Leq is to be averaged = 8

Source, receptor, and barrier all share same reference grade elevation; unless otherwise noted)
= Barrier of input height inserted between source and receptor

Project Phase No.	Project Phase Description	Client-supplied Construction Equipment Type	Comparable FHWA RCNM Construction Equipment Type	Quantity	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction (due to 7' tall residential barriers)*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	Ilbarr (dB)
1	Site preparation	Rubber Tired Dozers	dozer	1	40	82	140	0	8,5	61,2	8	480	57	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Tractors/Loaders/Backhoes	tractor	1	40	84	140	0	8,5	63,2	8	480	59	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Tractors/Loaders/Backhoes	front end loader	1	40	79	140	0	8,5	58,2	8	480	54	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
									Total Aggregate Noise Exposure from Site preparation Phase				**62.2**															
2	Grading	Excavators	excavator	1	40	81	140	0	8,5	60,2	8	480	56	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Graders	grader	1	40	85	140	0	8,5	64,2	8	480	60	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Rubber Tired Dozers	dozer	1	40	82	140	0	8,5	61,2	8	480	57	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Scrapers	scraper	1	40	84	140	0	8,5	63,2	8	480	59	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Tractors/Loaders/Backhoes	backhoe	1	40	78	140	0	8,5	57,2	8	480	53	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Trenchers	excavator	1	40	81	140	0	8,5	60,2	8	480	56	5	5		135	5	140	135,1	7,1	140,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
									Total Aggregate Noise Exposure from Grading Phase				**65.4**															
3	Off-Site Improvements	Pavers	paver	1	50	77	50	0	9,4	67,5	8	480	65	5	5		45	5	50	45,3	7,1	50,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Paving Equipment	pavement scarafier	1	20	85	50	0	9,4	75,5	8	480	69	5	5		45	5	50	45,3	7,1	50,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Rollers	roller	1	20	80	50	0	9,4	70,5	8	480	64	5	5		45	5	50	45,3	7,1	50,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Trenchers	excavator	1	40	81	50	0	9,4	71,5	8	480	68	5	5		45	5	50	45,3	7,1	50,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
									Total Aggregate Noise Exposure from Off-Site Improvements Phase				**72.5**															
4	Building construction	Cranes	crane	1	16	81	405	0	7,8	50,2	8	480	42	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Forklifts	man lift	1	20	75	405	0	7,8	44,2	8	480	37	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Generator Sets	generator	1	50	72	405	0	7,8	41,2	8	480	38	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Tractors/Loaders/Backhoes	backhoe	1	40	78	405	0	7,8	47,2	8	480	43	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Welders	welder / torch	1	40	73	405	0	7,8	42,2	8	480	38	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Aerial Lifts	man lift	1	20	75	405	0	7,8	44,2	8	480	37	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Cement and Mortar Mixers	concrete mixer truck	1	40	79	405	0	7,8	48,2	8	480	44	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
									Total Aggregate Noise Exposure from Building construction Phase				**49.4**															
5	On-Site Concrete	Pavers	paver	1	50	77	185	0	8,3	53,5	8	480	50	5	5		180	5	185	180,1	7,1	185,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Paving Equipment	pavement scarafier	1	20	85	185	0	8,3	61,5	8	480	54	5	5		180	5	185	180,1	7,1	185,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Rollers	roller	1	20	80	185	0	8,3	56,5	8	480	49	5	5		180	5	185	180,1	7,1	185,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Other Construction Equipment	all other equipment > 5 hp	1	50	85	185	0	8,3	61,5	8	480	58	5	5		180	5	185	180,1	7,1	185,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Surfacing Equipment	paver	1	50	77	185	0	8,3	53,5	8	480	50	5	5		180	5	185	180,1	7,1	185,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Cement and Mortar Mixers	concrete mixer truck	1	40	79	185	0	8,3	55,5	8	480	51	5	5		180	5	185	180,1	7,1	185,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
									Total Aggregate Noise Exposure from On-Site Concrete Phase				**61.6**															
6	Architectural coating	Air Compressors	compressor (air)	1	40	78	405	0	7,8	47,2	8	480	43	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
		Aerial Lifts	man lift	1	20	75	405	0	7,8	44,2	8	480	37	5	5		400	5	405	400,0	7,1	405,0	0,00	0,1	5,0	5,0	0,7	0,7	0,1
									Total Aggregate Noise Exposure from Architectural coating Phase				**44.2**															

Construction Schedule

Year	2026												2027												2028
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Construction Phase																									
Site preparation	✔																								
Grading		✔	✔	✔																					
Off-Site Improvements				✔	✔																				
Building construction					✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔										
On-Site Concrete																✔	✔								
Architectural coating																		✔							

Combined Construction Noise at Nearest Offsite Receptor:	Construction Phase to NSR position																								
Site preparation	62.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grading	0.0	65.4	65.4	65.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Improvements	0.0	0.0	0.0	72.5	72.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Building construction	0.0	0.0	0.0	0.0	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
On-Site Concrete	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.6	61.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural coating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concurrent Total (dBA)	**62**	**65**	**65**	**73**	**73**	**49**	**49**	**49**	**49**	**49**	**49**	**49**	**49**	**49**	**49**	**62**	**62**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Appendix C

Traffic Noise Modeling Input and Output

Dudek 28 February 2025
CM TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Existing

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier3	W	0.00	99.99	0.00				0.00	point52	52	6,522,538.0	2,043,185.5	0.00	7.00	0.00	0	0		
									point53	53	6,522,536.5	2,043,001.2	0.00	7.00	0.00	0	0		
									point54	54	6,522,536.0	2,042,897.8	0.00	7.00	0.00	0	0		
									point55	55	6,522,428.5	2,042,894.0	0.00	7.00					
Barrier4	W	0.00	99.99	0.00				0.00	point56	56	6,521,625.5	2,042,727.2	0.00	7.00	0.00	0	0		
									point57	57	6,522,445.0	2,042,708.5	0.00	7.00	0.00	0	0		
									point58	58	6,522,534.5	2,042,705.8	0.00	7.00	0.00	0	0		
									point59	59	6,522,535.5	2,042,817.0	0.00	7.00					
Barrier5	W	0.00	99.99	0.00				0.00	point60	60	6,523,873.5	2,041,240.5	0.00	7.00	0.00	0	0		
									point61	61	6,523,875.5	2,041,308.6	0.00	7.00	0.00	0	0		
									point62	62	6,523,868.0	2,041,313.9	0.00	7.00	0.00	0	0		
									point63	63	6,523,850.0	2,041,322.5	0.00	7.00	0.00	0	0		
									point64	64	6,523,746.5	2,041,323.9	0.00	7.00	0.00	0	0		
									point65	65	6,523,327.5	2,041,325.2	0.00	7.00	0.00	0	0		
									point66	66	6,523,114.0	2,041,325.4	0.00	7.00	0.00	0	0		
									point67	67	6,522,896.0	2,041,325.9	0.00	7.00	0.00	0	0		
									point68	68	6,522,894.5	2,041,238.4	0.00	7.00					

Dudek
CM
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

28 February 2025
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
R2	2	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
R3	3	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
R4	4	1	0.0	62.9	66	62.9	10	----	62.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 28 February 2025
CM TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Existing

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Division NB	13.0	point22	22	6,522,576.0	2,041,416.4	0.00	Stop	15.00	100	Average	
		point21	21	6,522,576.5	2,041,516.4	0.00				Average	
		point20	20	6,522,577.5	2,041,616.4	0.00				Average	
		point19	19	6,522,578.0	2,041,716.4	0.00				Average	
		point18	18	6,522,579.0	2,041,816.4	0.00				Average	
		point17	17	6,522,580.5	2,041,916.2	0.00				Average	
		point16	16	6,522,581.5	2,042,016.2	0.00				Average	
		point15	15	6,522,583.0	2,042,116.2	0.00				Average	
		point14	14	6,522,583.5	2,042,216.2	0.00				Average	
		point13	13	6,522,584.0	2,042,316.2	0.00				Average	
		point12	12	6,522,584.5	2,042,416.2	0.00				Average	
		point11	11	6,522,585.0	2,042,516.2	0.00				Average	
		point10	10	6,522,585.5	2,042,616.2	0.00				Average	
		point9	9	6,522,586.0	2,042,716.2	0.00				Average	
		point8	8	6,522,587.5	2,042,816.2	0.00				Average	
		point7	7	6,522,588.5	2,042,916.2	0.00				Average	
		point6	6	6,522,589.0	2,043,016.2	0.00				Average	
		point5	5	6,522,589.0	2,043,116.2	0.00				Average	
		point4	4	6,522,590.0	2,043,216.2	0.00				Average	
		point3	3	6,522,591.0	2,043,316.2	0.00					
Division SB	13.0	point23	23	6,522,573.5	2,043,314.0	0.00				Average	
		point24	24	6,522,573.0	2,043,214.0	0.00				Average	
		point25	25	6,522,573.0	2,043,114.0	0.00				Average	
		point26	26	6,522,574.0	2,043,014.1	0.00				Average	
		point27	27	6,522,574.5	2,042,914.1	0.00				Average	

		point28	28	6,522,575.5	2,042,814.1	0.00				Average	
		point29	29	6,522,574.0	2,042,714.1	0.00				Average	
		point30	30	6,522,574.0	2,042,614.1	0.00				Average	
		point31	31	6,522,574.0	2,042,514.1	0.00				Average	
		point32	32	6,522,572.0	2,042,414.1	0.00				Average	
		point33	33	6,522,570.5	2,042,314.1	0.00				Average	
		point34	34	6,522,570.5	2,042,214.1	0.00				Average	
		point35	35	6,522,569.5	2,042,114.1	0.00				Average	
		point36	36	6,522,568.5	2,042,014.1	0.00				Average	
		point37	37	6,522,566.5	2,041,914.1	0.00				Average	
		point38	38	6,522,566.0	2,041,814.1	0.00				Average	
		point39	39	6,522,565.0	2,041,714.1	0.00				Average	
		point40	40	6,522,564.5	2,041,614.1	0.00				Average	
		point41	41	6,522,563.0	2,041,514.1	0.00				Average	
		point42	42	6,522,562.5	2,041,414.1	0.00					
RanchoVista EB | Division-3rd	26.0	point58	58	6,522,349.0	2,041,374.5	0.00				Average	
		point57	57	6,522,484.5	2,041,371.5	0.00				Average	
		point56	56	6,522,617.5	2,041,369.0	0.00				Average	
		point55	55	6,522,717.5	2,041,367.4	0.00				Average	
		point54	54	6,522,817.5	2,041,366.2	0.00				Average	
		point53	53	6,522,917.5	2,041,365.2	0.00				Average	
		point52	52	6,523,017.5	2,041,365.1	0.00				Average	
		point51	51	6,523,117.5	2,041,364.1	0.00				Average	
		point50	50	6,523,217.5	2,041,363.6	0.00				Average	
		point49	49	6,523,317.5	2,041,363.1	0.00				Average	
		point48	48	6,523,417.5	2,041,362.6	0.00				Average	
		point47	47	6,523,517.5	2,041,362.0	0.00				Average	
		point46	46	6,523,617.5	2,041,361.5	0.00				Average	
		point45	45	6,523,717.5	2,041,360.8	0.00				Average	
		point44	44	6,523,817.5	2,041,360.4	0.00				Average	
		point43	43	6,523,863.5	2,041,360.4	0.00					
RanchoVista EB | 3rd-Sierra	26.0	point72	72	6,523,863.5	2,041,360.4	0.00	Signal	0.00	66	Average	
		point71	71	6,523,963.5	2,041,359.5	0.00				Average	
		point70	70	6,524,063.5	2,041,358.8	0.00				Average	
		point69	69	6,524,163.5	2,041,357.9	0.00				Average	
		point68	68	6,524,263.5	2,041,357.2	0.00				Average	
		point67	67	6,524,363.5	2,041,357.0	0.00					
RanchoVista WB | 3rd-Division	26.0	point103	103	6,523,939.5	2,041,393.5	0.00	Signal	0.00	66	Average	
		point102	102	6,523,839.5	2,041,394.1	0.00				Average	

		point101	101	6,523,739.5	2,041,394.8	0.00				Average	
		point100	100	6,523,639.5	2,041,395.2	0.00				Average	
		point99	99	6,523,539.5	2,041,396.0	0.00				Average	
		point98	98	6,523,439.5	2,041,396.5	0.00				Average	
		point97	97	6,523,339.5	2,041,397.2	0.00				Average	
		point96	96	6,523,239.5	2,041,397.9	0.00				Average	
		point95	95	6,523,139.5	2,041,398.5	0.00				Average	
		point94	94	6,523,039.5	2,041,398.5	0.00				Average	
		point93	93	6,522,939.5	2,041,399.4	0.00				Average	
		point92	92	6,522,839.5	2,041,400.1	0.00				Average	
		point91	91	6,522,739.5	2,041,400.2	0.00				Average	
		point90	90	6,522,639.5	2,041,401.6	0.00				Average	
		point89	89	6,522,539.5	2,041,402.8	0.00				Average	
		point88	88	6,522,439.5	2,041,404.0	0.00				Average	
		point87	87	6,522,350.5	2,041,407.0	0.00					
RanchoVistaCenter2	13.0	point104	104	6,523,863.5	2,041,376.1	0.00				Average	
		point105	105	6,523,818.0	2,041,377.0	0.00				Average	
		point106	106	6,523,718.0	2,041,377.5	0.00				Average	
		point107	107	6,523,617.5	2,041,378.5	0.00				Average	
		point108	108	6,523,518.0	2,041,379.0	0.00				Average	
		point109	109	6,523,418.0	2,041,379.4	0.00				Average	
		point110	110	6,523,318.0	2,041,379.6	0.00				Average	
		point111	111	6,523,218.0	2,041,380.5	0.00				Average	
		point112	112	6,523,118.0	2,041,381.2	0.00				Average	
		point113	113	6,523,017.5	2,041,381.8	0.00				Average	
		point114	114	6,522,917.5	2,041,382.0	0.00				Average	
		point115	115	6,522,818.0	2,041,382.9	0.00				Average	
		point116	116	6,522,718.0	2,041,383.9	0.00				Average	
		point117	117	6,522,618.0	2,041,384.8	0.00				Average	
		point118	118	6,522,484.5	2,041,387.4	0.00				Average	
		point120	120	6,522,349.0	2,041,390.4	0.00					
RanchoVistaCenter	13.0	point139	139	6,524,363.5	2,041,373.6	0.00				Average	
		point129	129	6,524,263.5	2,041,374.2	0.00				Average	
		point130	130	6,524,163.5	2,041,374.9	0.00				Average	
		point131	131	6,524,063.5	2,041,375.4	0.00				Average	
		point132	132	6,523,964.0	2,041,376.8	0.00				Average	
		point104	133	6,523,863.5	2,041,376.1	0.00					
RanchoVista WB | Sierra-3rd	26.0	point140	140	6,524,408.0	2,041,391.2	0.00				Average	
		point77	77	6,524,308.0	2,041,391.1	0.00				Average	

		point76	76	6,524,208.0	2,041,391.1	0.00				Average	
		point75	75	6,524,108.0	2,041,391.9	0.00				Average	
		point74	74	6,524,008.0	2,041,392.9	0.00				Average	
		point73	73	6,523,939.5	2,041,393.5	0.00					

Dudek 28 February 2025
CM TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Existing

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	6,522,525.0	2,042,942.1	0.00	4.92	0.00	66	10.0	8.0	Y
R2	2	1	6,522,517.5	2,042,732.2	0.00	4.92	0.00	66	10.0	8.0	Y
R3	3	1	6,522,926.0	2,041,305.6	0.00	4.92	0.00	66	10.0	8.0	Y
R4	4	1	6,523,842.0	2,041,316.4	0.00	4.92	0.00	66	10.0	8.0	Y

Dudek 28 February 2025
CM TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Existing

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Division NB	point22	22	198	55	3	55	5	55	0	0	0	0
	point21	21	198	55	3	55	5	55	0	0	0	0
	point20	20	198	55	3	55	5	55	0	0	0	0
	point19	19	198	55	3	55	5	55	0	0	0	0
	point18	18	198	55	3	55	5	55	0	0	0	0
	point17	17	198	55	3	55	5	55	0	0	0	0
	point16	16	198	55	3	55	5	55	0	0	0	0
	point15	15	198	55	3	55	5	55	0	0	0	0
	point14	14	198	55	3	55	5	55	0	0	0	0
	point13	13	198	55	3	55	5	55	0	0	0	0
	point12	12	198	55	3	55	5	55	0	0	0	0
	point11	11	198	55	3	55	5	55	0	0	0	0
	point10	10	198	55	3	55	5	55	0	0	0	0
	point9	9	198	55	3	55	5	55	0	0	0	0
	point8	8	198	55	3	55	5	55	0	0	0	0
	point7	7	198	55	3	55	5	55	0	0	0	0
	point6	6	198	55	3	55	5	55	0	0	0	0
	point5	5	198	55	3	55	5	55	0	0	0	0
	point4	4	198	55	3	55	5	55	0	0	0	0
	point3	3										
Division SB	point23	23	174	55	3	55	4	55	0	0	0	0
	point24	24	174	55	3	55	4	55	0	0	0	0
	point25	25	174	55	3	55	4	55	0	0	0	0

	point26	26	174	55	3	55	4	55	0	0	0	0
	point27	27	174	55	3	55	4	55	0	0	0	0
	point28	28	174	55	3	55	4	55	0	0	0	0
	point29	29	174	55	3	55	4	55	0	0	0	0
	point30	30	174	55	3	55	4	55	0	0	0	0
	point31	31	174	55	3	55	4	55	0	0	0	0
	point32	32	174	55	3	55	4	55	0	0	0	0
	point33	33	174	55	3	55	4	55	0	0	0	0
	point34	34	174	55	3	55	4	55	0	0	0	0
	point35	35	174	55	3	55	4	55	0	0	0	0
	point36	36	174	55	3	55	4	55	0	0	0	0
	point37	37	174	55	3	55	4	55	0	0	0	0
	point38	38	174	55	3	55	4	55	0	0	0	0
	point39	39	174	55	3	55	4	55	0	0	0	0
	point40	40	174	55	3	55	4	55	0	0	0	0
	point41	41	174	55	3	55	4	55	0	0	0	0
	point42	42										
RanchoVista EB | Division-3rd	point58	58	826	55	13	55	20	55	0	0	0	0
	point57	57	826	55	13	55	20	55	0	0	0	0
	point56	56	826	55	13	55	20	55	0	0	0	0
	point55	55	826	55	13	55	20	55	0	0	0	0
	point54	54	826	55	13	55	20	55	0	0	0	0
	point53	53	826	55	13	55	20	55	0	0	0	0
	point52	52	826	55	13	55	20	55	0	0	0	0
	point51	51	826	55	13	55	20	55	0	0	0	0
	point50	50	826	55	13	55	20	55	0	0	0	0
	point49	49	826	55	13	55	20	55	0	0	0	0
	point48	48	826	55	13	55	20	55	0	0	0	0
	point47	47	826	55	13	55	20	55	0	0	0	0
	point46	46	826	55	13	55	20	55	0	0	0	0
	point45	45	826	55	13	55	20	55	0	0	0	0
	point44	44	826	55	13	55	20	55	0	0	0	0
	point43	43										
RanchoVista EB | 3rd-Sierra	point72	72	809	55	13	55	19	55	0	0	0	0
	point71	71	809	55	13	55	19	55	0	0	0	0
	point70	70	809	55	13	55	19	55	0	0	0	0

	point69	69	809	55	13	55	19	55	0	0	0	0
	point68	68	809	55	13	55	19	55	0	0	0	0
	point67	67										
RanchoVista WB | 3rd-Division	point103	103	1038	55	16	55	25	55	0	0	0	0
	point102	102	1038	55	16	55	25	55	0	0	0	0
	point101	101	1038	55	16	55	25	55	0	0	0	0
	point100	100	1038	55	16	55	25	55	0	0	0	0
	point99	99	1038	55	16	55	25	55	0	0	0	0
	point98	98	1038	55	16	55	25	55	0	0	0	0
	point97	97	1038	55	16	55	25	55	0	0	0	0
	point96	96	1038	55	16	55	25	55	0	0	0	0
	point95	95	1038	55	16	55	25	55	0	0	0	0
	point94	94	1038	55	16	55	25	55	0	0	0	0
	point93	93	1038	55	16	55	25	55	0	0	0	0
	point92	92	1038	55	16	55	25	55	0	0	0	0
	point91	91	1038	55	16	55	25	55	0	0	0	0
	point90	90	1038	55	16	55	25	55	0	0	0	0
	point89	89	1038	55	16	55	25	55	0	0	0	0
	point88	88	1038	55	16	55	25	55	0	0	0	0
	point87	87										
RanchoVistaCenter2	point104	104	0	0	0	0	0	0	0	0	0	0
	point105	105	0	0	0	0	0	0	0	0	0	0
	point106	106	0	0	0	0	0	0	0	0	0	0
	point107	107	0	0	0	0	0	0	0	0	0	0
	point108	108	0	0	0	0	0	0	0	0	0	0
	point109	109	0	0	0	0	0	0	0	0	0	0
	point110	110	0	0	0	0	0	0	0	0	0	0
	point111	111	0	0	0	0	0	0	0	0	0	0
	point112	112	0	0	0	0	0	0	0	0	0	0
	point113	113	0	0	0	0	0	0	0	0	0	0
	point114	114	0	0	0	0	0	0	0	0	0	0
	point115	115	0	0	0	0	0	0	0	0	0	0
	point116	116	0	0	0	0	0	0	0	0	0	0
	point117	117	0	0	0	0	0	0	0	0	0	0
	point118	118	0	0	0	0	0	0	0	0	0	0
	point120	120										

RanchoVistaCenter	point139	139	0	0	0	0	0	0	0	0	0	0
	point129	129	0	0	0	0	0	0	0	0	0	0
	point130	130	0	0	0	0	0	0	0	0	0	0
	point131	131	0	0	0	0	0	0	0	0	0	0
	point132	132	0	0	0	0	0	0	0	0	0	0
	point104	133										
RanchoVista WB | Sierra-3rd	point140	140	938	55	15	55	22	55	0	0	0	0
	point77	77	938	55	15	55	22	55	0	0	0	0
	point76	76	938	55	15	55	22	55	0	0	0	0
	point75	75	938	55	15	55	22	55	0	0	0	0
	point74	74	938	55	15	55	22	55	0	0	0	0
	point73	73										

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INPUT: BARRIERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - No Grade

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier3	W	0.00	99.99	0.00				0.00	point52	52	6,522,538.0	2,043,185.5	0.00	7.00	0.00	0	0		
									point53	53	6,522,536.5	2,043,001.2	0.00	7.00	0.00	0	0		
									point54	54	6,522,536.0	2,042,897.8	0.00	7.00	0.00	0	0		
									point55	55	6,522,428.5	2,042,894.0	0.00	7.00					
Barrier4	W	0.00	99.99	0.00				0.00	point56	56	6,521,625.5	2,042,727.2	0.00	7.00	0.00	0	0		
									point57	57	6,522,445.0	2,042,708.5	0.00	7.00	0.00	0	0		
									point58	58	6,522,534.5	2,042,705.8	0.00	7.00	0.00	0	0		
									point59	59	6,522,535.5	2,042,817.0	0.00	7.00					
Barrier5	W	0.00	99.99	0.00				0.00	point60	60	6,523,873.5	2,041,240.5	0.00	7.00	0.00	0	0		
									point61	61	6,523,875.5	2,041,308.6	0.00	7.00	0.00	0	0		
									point62	62	6,523,868.0	2,041,313.9	0.00	7.00	0.00	0	0		
									point63	63	6,523,850.0	2,041,322.5	0.00	7.00	0.00	0	0		
									point64	64	6,523,746.5	2,041,323.9	0.00	7.00	0.00	0	0		
									point65	65	6,523,327.5	2,041,325.2	0.00	7.00	0.00	0	0		
									point66	66	6,523,114.0	2,041,325.4	0.00	7.00	0.00	0	0		
									point67	67	6,522,896.0	2,041,325.9	0.00	7.00	0.00	0	0		
									point68	68	6,522,894.5	2,041,238.4	0.00	7.00					

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Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - No Grade
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc		Calculated	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
R2	2	1	0.0	56.9	66	56.9	10	----	56.9	0.0	8	-8.0
R3	3	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0
R4	4	1	0.0	63.3	66	63.3	10	----	63.3	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

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INPUT: ROADWAYS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - No Grade

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Division NB	13.0	point22	22	6,522,576.0	2,041,416.4	0.00	Stop	15.00	100	Average	
		point21	21	6,522,576.5	2,041,516.4	0.00				Average	
		point20	20	6,522,577.5	2,041,616.4	0.00				Average	
		point19	19	6,522,578.0	2,041,716.4	0.00				Average	
		point18	18	6,522,579.0	2,041,816.4	0.00				Average	
		point17	17	6,522,580.5	2,041,916.2	0.00				Average	
		point16	16	6,522,581.5	2,042,016.2	0.00				Average	
		point15	15	6,522,583.0	2,042,116.2	0.00				Average	
		point14	14	6,522,583.5	2,042,216.2	0.00				Average	
		point13	13	6,522,584.0	2,042,316.2	0.00				Average	
		point12	12	6,522,584.5	2,042,416.2	0.00				Average	
		point11	11	6,522,585.0	2,042,516.2	0.00				Average	
		point10	10	6,522,585.5	2,042,616.2	0.00				Average	
		point9	9	6,522,586.0	2,042,716.2	0.00				Average	
		point8	8	6,522,587.5	2,042,816.2	0.00				Average	
		point7	7	6,522,588.5	2,042,916.2	0.00				Average	
		point6	6	6,522,589.0	2,043,016.2	0.00				Average	
		point5	5	6,522,589.0	2,043,116.2	0.00				Average	
		point4	4	6,522,590.0	2,043,216.2	0.00				Average	
		point3	3	6,522,591.0	2,043,316.2	0.00					
Division SB	13.0	point23	23	6,522,573.5	2,043,314.0	0.00				Average	
		point24	24	6,522,573.0	2,043,214.0	0.00				Average	
		point25	25	6,522,573.0	2,043,114.0	0.00				Average	
		point26	26	6,522,574.0	2,043,014.1	0.00				Average	
		point27	27	6,522,574.5	2,042,914.1	0.00				Average	

		point28	28	6,522,575.5	2,042,814.1	0.00				Average	
		point29	29	6,522,574.0	2,042,714.1	0.00				Average	
		point30	30	6,522,574.0	2,042,614.1	0.00				Average	
		point31	31	6,522,574.0	2,042,514.1	0.00				Average	
		point32	32	6,522,572.0	2,042,414.1	0.00				Average	
		point33	33	6,522,570.5	2,042,314.1	0.00				Average	
		point34	34	6,522,570.5	2,042,214.1	0.00				Average	
		point35	35	6,522,569.5	2,042,114.1	0.00				Average	
		point36	36	6,522,568.5	2,042,014.1	0.00				Average	
		point37	37	6,522,566.5	2,041,914.1	0.00				Average	
		point38	38	6,522,566.0	2,041,814.1	0.00				Average	
		point39	39	6,522,565.0	2,041,714.1	0.00				Average	
		point40	40	6,522,564.5	2,041,614.1	0.00				Average	
		point41	41	6,522,563.0	2,041,514.1	0.00				Average	
		point42	42	6,522,562.5	2,041,414.1	0.00					
RanchoVista EB | Division-3rd	26.0	point58	58	6,522,349.0	2,041,374.5	0.00				Average	
		point57	57	6,522,484.5	2,041,371.5	0.00				Average	
		point56	56	6,522,617.5	2,041,369.0	0.00				Average	
		point55	55	6,522,717.5	2,041,367.4	0.00				Average	
		point54	54	6,522,817.5	2,041,366.2	0.00				Average	
		point53	53	6,522,917.5	2,041,365.2	0.00				Average	
		point52	52	6,523,017.5	2,041,365.1	0.00				Average	
		point51	51	6,523,117.5	2,041,364.1	0.00				Average	
		point50	50	6,523,217.5	2,041,363.6	0.00				Average	
		point49	49	6,523,317.5	2,041,363.1	0.00				Average	
		point48	48	6,523,417.5	2,041,362.6	0.00				Average	
		point47	47	6,523,517.5	2,041,362.0	0.00				Average	
		point46	46	6,523,617.5	2,041,361.5	0.00				Average	
		point45	45	6,523,717.5	2,041,360.8	0.00				Average	
		point44	44	6,523,817.5	2,041,360.4	0.00				Average	
		point43	43	6,523,863.5	2,041,360.4	0.00					
RanchoVista EB | 3rd-Sierra	26.0	point72	72	6,523,863.5	2,041,360.4	0.00	Signal	0.00	66	Average	
		point71	71	6,523,963.5	2,041,359.5	0.00				Average	
		point70	70	6,524,063.5	2,041,358.8	0.00				Average	
		point69	69	6,524,163.5	2,041,357.9	0.00				Average	
		point68	68	6,524,263.5	2,041,357.2	0.00				Average	
		point67	67	6,524,363.5	2,041,357.0	0.00					
RanchoVista WB | 3rd-Division	26.0	point103	103	6,523,939.5	2,041,393.5	0.00	Signal	0.00	66	Average	
		point102	102	6,523,839.5	2,041,394.1	0.00				Average	

		point101	101	6,523,739.5	2,041,394.8	0.00				Average	
		point100	100	6,523,639.5	2,041,395.2	0.00				Average	
		point99	99	6,523,539.5	2,041,396.0	0.00				Average	
		point98	98	6,523,439.5	2,041,396.5	0.00				Average	
		point97	97	6,523,339.5	2,041,397.2	0.00				Average	
		point96	96	6,523,239.5	2,041,397.9	0.00				Average	
		point95	95	6,523,139.5	2,041,398.5	0.00				Average	
		point94	94	6,523,039.5	2,041,398.5	0.00				Average	
		point93	93	6,522,939.5	2,041,399.4	0.00				Average	
		point92	92	6,522,839.5	2,041,400.1	0.00				Average	
		point91	91	6,522,739.5	2,041,400.2	0.00				Average	
		point90	90	6,522,639.5	2,041,401.6	0.00				Average	
		point89	89	6,522,539.5	2,041,402.8	0.00				Average	
		point88	88	6,522,439.5	2,041,404.0	0.00				Average	
		point87	87	6,522,350.5	2,041,407.0	0.00					
RanchoVistaCenter2	13.0	point104	104	6,523,863.5	2,041,376.1	0.00				Average	
		point105	105	6,523,818.0	2,041,377.0	0.00				Average	
		point106	106	6,523,718.0	2,041,377.5	0.00				Average	
		point107	107	6,523,617.5	2,041,378.5	0.00				Average	
		point108	108	6,523,518.0	2,041,379.0	0.00				Average	
		point109	109	6,523,418.0	2,041,379.4	0.00				Average	
		point110	110	6,523,318.0	2,041,379.6	0.00				Average	
		point111	111	6,523,218.0	2,041,380.5	0.00				Average	
		point112	112	6,523,118.0	2,041,381.2	0.00				Average	
		point113	113	6,523,017.5	2,041,381.8	0.00				Average	
		point114	114	6,522,917.5	2,041,382.0	0.00				Average	
		point115	115	6,522,818.0	2,041,382.9	0.00				Average	
		point116	116	6,522,718.0	2,041,383.9	0.00				Average	
		point117	117	6,522,618.0	2,041,384.8	0.00				Average	
		point118	118	6,522,484.5	2,041,387.4	0.00				Average	
		point120	120	6,522,349.0	2,041,390.4	0.00					
RanchoVistaCenter	13.0	point139	139	6,524,363.5	2,041,373.6	0.00				Average	
		point129	129	6,524,263.5	2,041,374.2	0.00				Average	
		point130	130	6,524,163.5	2,041,374.9	0.00				Average	
		point131	131	6,524,063.5	2,041,375.4	0.00				Average	
		point132	132	6,523,964.0	2,041,376.8	0.00				Average	
		point104	133	6,523,863.5	2,041,376.1	0.00					
RanchoVista WB | Sierra-3rd	26.0	point140	140	6,524,408.0	2,041,391.2	0.00				Average	
		point77	77	6,524,308.0	2,041,391.1	0.00				Average	

		point76	76	6,524,208.0	2,041,391.1	0.00				Average	
		point75	75	6,524,108.0	2,041,391.9	0.00				Average	
		point74	74	6,524,008.0	2,041,392.9	0.00				Average	
		point73	73	6,523,939.5	2,041,393.5	0.00					

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INPUT: RECEIVERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - No Grade

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	6,522,525.0	2,042,942.1	0.00	4.92	0.00	66	10.0	8.0	Y
R2	2	1	6,522,517.5	2,042,732.2	0.00	4.92	0.00	66	10.0	8.0	Y
R3	3	1	6,522,926.0	2,041,305.6	0.00	4.92	0.00	66	10.0	8.0	Y
R4	4	1	6,523,842.0	2,041,316.4	0.00	4.92	0.00	66	10.0	8.0	Y

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INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - No Grade

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Division NB	point22	22	207	55	3	55	5	55	0	0	0	0
	point21	21	207	55	3	55	5	55	0	0	0	0
	point20	20	207	55	3	55	5	55	0	0	0	0
	point19	19	207	55	3	55	5	55	0	0	0	0
	point18	18	207	55	3	55	5	55	0	0	0	0
	point17	17	207	55	3	55	5	55	0	0	0	0
	point16	16	207	55	3	55	5	55	0	0	0	0
	point15	15	207	55	3	55	5	55	0	0	0	0
	point14	14	207	55	3	55	5	55	0	0	0	0
	point13	13	207	55	3	55	5	55	0	0	0	0
	point12	12	207	55	3	55	5	55	0	0	0	0
	point11	11	207	55	3	55	5	55	0	0	0	0
	point10	10	207	55	3	55	5	55	0	0	0	0
	point9	9	207	55	3	55	5	55	0	0	0	0
	point8	8	207	55	3	55	5	55	0	0	0	0
	point7	7	207	55	3	55	5	55	0	0	0	0
	point6	6	207	55	3	55	5	55	0	0	0	0
	point5	5	207	55	3	55	5	55	0	0	0	0
	point4	4	207	55	3	55	5	55	0	0	0	0
	point3	3										
Division SB	point23	23	183	55	3	55	4	55	0	0	0	0
	point24	24	183	55	3	55	4	55	0	0	0	0
	point25	25	183	55	3	55	4	55	0	0	0	0

	point26	26	183	55	3	55	4	55	0	0	0	0
	point27	27	183	55	3	55	4	55	0	0	0	0
	point28	28	183	55	3	55	4	55	0	0	0	0
	point29	29	183	55	3	55	4	55	0	0	0	0
	point30	30	183	55	3	55	4	55	0	0	0	0
	point31	31	183	55	3	55	4	55	0	0	0	0
	point32	32	183	55	3	55	4	55	0	0	0	0
	point33	33	183	55	3	55	4	55	0	0	0	0
	point34	34	183	55	3	55	4	55	0	0	0	0
	point35	35	183	55	3	55	4	55	0	0	0	0
	point36	36	183	55	3	55	4	55	0	0	0	0
	point37	37	183	55	3	55	4	55	0	0	0	0
	point38	38	183	55	3	55	4	55	0	0	0	0
	point39	39	183	55	3	55	4	55	0	0	0	0
	point40	40	183	55	3	55	4	55	0	0	0	0
	point41	41	183	55	3	55	4	55	0	0	0	0
	point42	42										
RanchoVista EB | Division-3rd	point58	58	891	55	14	55	21	55	0	0	0	0
	point57	57	891	55	14	55	21	55	0	0	0	0
	point56	56	891	55	14	55	21	55	0	0	0	0
	point55	55	891	55	14	55	21	55	0	0	0	0
	point54	54	891	55	14	55	21	55	0	0	0	0
	point53	53	891	55	14	55	21	55	0	0	0	0
	point52	52	891	55	14	55	21	55	0	0	0	0
	point51	51	891	55	14	55	21	55	0	0	0	0
	point50	50	891	55	14	55	21	55	0	0	0	0
	point49	49	891	55	14	55	21	55	0	0	0	0
	point48	48	891	55	14	55	21	55	0	0	0	0
	point47	47	891	55	14	55	21	55	0	0	0	0
	point46	46	891	55	14	55	21	55	0	0	0	0
	point45	45	891	55	14	55	21	55	0	0	0	0
	point44	44	891	55	14	55	21	55	0	0	0	0
	point43	43										
RanchoVista EB | 3rd-Sierra	point72	72	873	55	14	55	21	55	0	0	0	0
	point71	71	873	55	14	55	21	55	0	0	0	0
	point70	70	873	55	14	55	21	55	0	0	0	0

	point69	69	873	55	14	55	21	55	0	0	0	0
	point68	68	873	55	14	55	21	55	0	0	0	0
	point67	67										
RanchoVista WB | 3rd-Division	point103	103	1222	55	19	55	29	55	0	0	0	0
	point102	102	1222	55	19	55	29	55	0	0	0	0
	point101	101	1222	55	19	55	29	55	0	0	0	0
	point100	100	1222	55	19	55	29	55	0	0	0	0
	point99	99	1222	55	19	55	29	55	0	0	0	0
	point98	98	1222	55	19	55	29	55	0	0	0	0
	point97	97	1222	55	19	55	29	55	0	0	0	0
	point96	96	1222	55	19	55	29	55	0	0	0	0
	point95	95	1222	55	19	55	29	55	0	0	0	0
	point94	94	1222	55	19	55	29	55	0	0	0	0
	point93	93	1222	55	19	55	29	55	0	0	0	0
	point92	92	1222	55	19	55	29	55	0	0	0	0
	point91	91	1222	55	19	55	29	55	0	0	0	0
	point90	90	1222	55	19	55	29	55	0	0	0	0
	point89	89	1222	55	19	55	29	55	0	0	0	0
	point88	88	1222	55	19	55	29	55	0	0	0	0
	point87	87										
RanchoVistaCenter2	point104	104	0	0	0	0	0	0	0	0	0	0
	point105	105	0	0	0	0	0	0	0	0	0	0
	point106	106	0	0	0	0	0	0	0	0	0	0
	point107	107	0	0	0	0	0	0	0	0	0	0
	point108	108	0	0	0	0	0	0	0	0	0	0
	point109	109	0	0	0	0	0	0	0	0	0	0
	point110	110	0	0	0	0	0	0	0	0	0	0
	point111	111	0	0	0	0	0	0	0	0	0	0
	point112	112	0	0	0	0	0	0	0	0	0	0
	point113	113	0	0	0	0	0	0	0	0	0	0
	point114	114	0	0	0	0	0	0	0	0	0	0
	point115	115	0	0	0	0	0	0	0	0	0	0
	point116	116	0	0	0	0	0	0	0	0	0	0
	point117	117	0	0	0	0	0	0	0	0	0	0
	point118	118	0	0	0	0	0	0	0	0	0	0
	point120	120										

RanchoVistaCenter	point139	139	0	0	0	0	0	0	0	0	0	0
	point129	129	0	0	0	0	0	0	0	0	0	0
	point130	130	0	0	0	0	0	0	0	0	0	0
	point131	131	0	0	0	0	0	0	0	0	0	0
	point132	132	0	0	0	0	0	0	0	0	0	0
	point104	133										
RanchoVista WB | Sierra-3rd	point140	140	1118	55	17	55	27	55	0	0	0	0
	point77	77	1118	55	17	55	27	55	0	0	0	0
	point76	76	1118	55	17	55	27	55	0	0	0	0
	point75	75	1118	55	17	55	27	55	0	0	0	0
	point74	74	1118	55	17	55	27	55	0	0	0	0
	point73	73										

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CM TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - With Grade

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier3	W	0.00	99.99	0.00				0.00	point52	52	6,522,538.0	2,043,185.5	0.00	7.00	0.00	0	0		
									point53	53	6,522,536.5	2,043,001.2	0.00	7.00	0.00	0	0		
									point54	54	6,522,536.0	2,042,897.8	0.00	7.00	0.00	0	0		
									point55	55	6,522,428.5	2,042,894.0	0.00	7.00					
Barrier4	W	0.00	99.99	0.00				0.00	point56	56	6,521,625.5	2,042,727.2	0.00	7.00	0.00	0	0		
									point57	57	6,522,445.0	2,042,708.5	0.00	7.00	0.00	0	0		
									point58	58	6,522,534.5	2,042,705.8	0.00	7.00	0.00	0	0		
									point59	59	6,522,535.5	2,042,817.0	0.00	7.00					
Barrier5	W	0.00	99.99	0.00				0.00	point60	60	6,523,873.5	2,041,240.5	0.00	7.00	0.00	0	0		
									point61	61	6,523,875.5	2,041,308.6	0.00	7.00	0.00	0	0		
									point62	62	6,523,868.0	2,041,313.9	0.00	7.00	0.00	0	0		
									point63	63	6,523,850.0	2,041,322.5	0.00	7.00	0.00	0	0		
									point64	64	6,523,746.5	2,041,323.9	0.00	7.00	0.00	0	0		
									point65	65	6,523,327.5	2,041,325.2	0.00	7.00	0.00	0	0		
									point66	66	6,523,114.0	2,041,325.4	0.00	7.00	0.00	0	0		
									point67	67	6,522,896.0	2,041,325.9	0.00	7.00	0.00	0	0		
									point68	68	6,522,894.5	2,041,238.4	0.00	7.00					

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28 February 2025
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - With Grade
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc					
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
R2	2	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
R3	3	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0
R4	4	1	0.0	59.4	66	59.4	10	----	59.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

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INPUT: ROADWAYS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - With Grade

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Division NB	13.0	point22	22	6,522,576.0	2,041,443.4	0.00	Stop	15.00	100	Average	
		point21	21	6,522,576.5	2,041,543.4	0.00				Average	
		point20	20	6,522,577.5	2,041,616.4	0.00				Average	
		point19	19	6,522,578.0	2,041,716.4	0.00				Average	
		point18	18	6,522,579.0	2,041,816.4	0.00				Average	
		point17	17	6,522,580.5	2,041,916.2	0.00				Average	
		point16	16	6,522,581.5	2,042,016.2	0.00				Average	
		point15	15	6,522,583.0	2,042,116.2	0.00				Average	
		point14	14	6,522,583.5	2,042,216.2	0.00				Average	
		point13	13	6,522,584.0	2,042,316.2	0.00				Average	
		point12	12	6,522,584.5	2,042,416.2	0.00				Average	
		point11	11	6,522,585.0	2,042,516.2	0.00				Average	
		point10	10	6,522,585.5	2,042,616.2	0.00				Average	
		point9	9	6,522,586.0	2,042,716.2	0.00				Average	
		point8	8	6,522,587.5	2,042,816.2	0.00				Average	
		point7	7	6,522,588.5	2,042,916.2	0.00				Average	
		point6	6	6,522,589.0	2,043,016.2	0.00				Average	
		point5	5	6,522,589.0	2,043,116.2	0.00				Average	
		point4	4	6,522,590.0	2,043,216.2	0.00					
Division SB	13.0	point24	24	6,522,573.0	2,043,214.0	0.00				Average	
		point25	25	6,522,573.0	2,043,114.0	0.00				Average	
		point26	26	6,522,574.0	2,043,014.1	0.00				Average	
		point27	27	6,522,574.5	2,042,914.1	0.00				Average	
		point28	28	6,522,575.5	2,042,814.1	0.00				Average	
		point29	29	6,522,574.0	2,042,714.1	0.00				Average	

		point30	30	6,522,574.0	2,042,614.1	0.00				Average	
		point31	31	6,522,574.0	2,042,514.1	0.00				Average	
		point32	32	6,522,572.0	2,042,414.1	0.00				Average	
		point33	33	6,522,570.5	2,042,314.1	0.00				Average	
		point34	34	6,522,570.5	2,042,214.1	0.00				Average	
		point35	35	6,522,569.5	2,042,114.1	0.00				Average	
		point36	36	6,522,568.5	2,042,014.1	0.00				Average	
		point37	37	6,522,566.5	2,041,914.1	0.00				Average	
		point38	38	6,522,566.0	2,041,814.1	0.00				Average	
		point39	39	6,522,565.0	2,041,714.1	0.00				Average	
		point40	40	6,522,564.5	2,041,614.1	0.00				Average	
		point41	41	6,522,563.0	2,041,514.1	0.00				Average	
		point42	42	6,522,562.5	2,041,447.5	0.00					
Rancho Vista EB | Division-3rd	60.0	point351	141	6,522,514.5	2,041,378.5	0.00	Signal	15.00	66	Average	
		point350	142	6,522,655.5	2,041,377.2	0.00				Average	
		point349	143	6,522,755.5	2,041,376.8	0.00				Average	
		point348	144	6,522,855.5	2,041,376.0	0.00				Average	
		point347	145	6,522,955.5	2,041,375.6	0.00				Average	
		point346	146	6,523,055.5	2,041,374.9	0.00				Average	
		point345	147	6,523,155.5	2,041,374.5	0.00				Average	
		point344	148	6,523,255.5	2,041,374.4	0.00				Average	
		point343	149	6,523,355.5	2,041,376.0	0.00				Average	
		point342	150	6,523,455.5	2,041,377.6	0.00				Average	
		point341	151	6,523,555.5	2,041,382.5	0.00				Average	
		point340	152	6,523,655.0	2,041,390.5	0.00				Average	
		point339	153	6,523,755.0	2,041,398.1	0.00				Average	
		point338	154	6,523,854.0	2,041,410.5	0.00					
Rancho Vista EB | 3rd-Sierra	60.0	point373	155	6,523,854.0	2,041,410.5	0.00	Signal	0.00	50	Average	
		point337	156	6,523,953.5	2,041,422.6	0.00				Average	
		point336	157	6,524,052.5	2,041,436.1	0.00				Average	
		point335	158	6,524,151.0	2,041,452.2	0.00				Average	
		point334	159	6,524,250.0	2,041,467.0	0.00				Average	
		point333	160	6,524,348.5	2,041,483.1	0.00				Average	
		point332	161	6,524,444.0	2,041,497.4	0.00					
Rancho Vista WB | Sierra-3rd	60.0	point370	162	6,524,432.5	2,041,551.4	0.00	Signal	15.00	50	Average	
		point369	163	6,524,333.5	2,041,536.9	0.00				Average	
		point368	164	6,524,234.5	2,041,522.4	0.00				Average	
		point367	165	6,524,136.0	2,041,505.4	0.00				Average	
		point366	166	6,524,037.0	2,041,490.0	0.00				Average	

		point365	167	6,523,938.0	2,041,476.2	0.00					
Rancho Vista WB | 3rd-Division	60.0	point372	168	6,523,938.0	2,041,476.2	0.00	Signal	0.00	50	Average	
		point364	169	6,523,839.0	2,041,462.5	0.00				Average	
		point363	170	6,523,739.5	2,041,453.8	0.00				Average	
		point362	171	6,523,640.0	2,041,443.9	0.00				Average	
		point361	172	6,523,540.0	2,041,436.1	0.00				Average	
		point360	173	6,523,440.5	2,041,429.8	0.00				Average	
		point359	174	6,523,340.5	2,041,429.8	0.00				Average	
		point358	175	6,523,240.5	2,041,429.8	0.00				Average	
		point357	176	6,523,140.5	2,041,429.8	0.00				Average	
		point356	177	6,523,040.5	2,041,429.8	0.00				Average	
		point355	178	6,522,940.5	2,041,429.8	0.00				Average	
		point354	179	6,522,840.5	2,041,429.8	0.00				Average	
		point353	180	6,522,740.5	2,041,429.8	0.00				Average	
		point371	181	6,522,648.0	2,041,430.5	0.00				Average	
		point352	182	6,522,522.0	2,041,429.2	0.00					

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INPUT: RECEIVERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - With Grade

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	6,522,525.0	2,042,942.1	0.00	4.92	0.00	66	10.0	8.0	Y
R2	2	1	6,522,517.5	2,042,732.2	0.00	4.92	0.00	66	10.0	8.0	Y
R3	3	1	6,522,926.0	2,041,305.6	0.00	4.92	0.00	66	10.0	8.0	Y
R4	4	1	6,523,842.0	2,041,316.4	0.00	4.92	0.00	66	10.0	8.0	Y

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INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - No Project - With Grade

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Division NB	point22	22	190	55	3	55	5	55	0	0	0	0
	point21	21	190	55	3	55	5	55	0	0	0	0
	point20	20	190	55	3	55	5	55	0	0	0	0
	point19	19	190	55	3	55	5	55	0	0	0	0
	point18	18	190	55	3	55	5	55	0	0	0	0
	point17	17	190	55	3	55	5	55	0	0	0	0
	point16	16	190	55	3	55	5	55	0	0	0	0
	point15	15	190	55	3	55	5	55	0	0	0	0
	point14	14	190	55	3	55	5	55	0	0	0	0
	point13	13	190	55	3	55	5	55	0	0	0	0
	point12	12	190	55	3	55	5	55	0	0	0	0
	point11	11	190	55	3	55	5	55	0	0	0	0
	point10	10	190	55	3	55	5	55	0	0	0	0
	point9	9	190	55	3	55	5	55	0	0	0	0
	point8	8	190	55	3	55	5	55	0	0	0	0
	point7	7	190	55	3	55	5	55	0	0	0	0
	point6	6	190	55	3	55	5	55	0	0	0	0
	point5	5	190	55	3	55	5	55	0	0	0	0
	point4	4										
Division SB	point24	24	183	55	3	55	4	55	0	0	0	0
	point25	25	183	55	3	55	4	55	0	0	0	0
	point26	26	183	55	3	55	4	55	0	0	0	0
	point27	27	183	55	3	55	4	55	0	0	0	0

	point28	28	183	55	3	55	4	55	0	0	0	0
	point29	29	183	55	3	55	4	55	0	0	0	0
	point30	30	183	55	3	55	4	55	0	0	0	0
	point31	31	183	55	3	55	4	55	0	0	0	0
	point32	32	183	55	3	55	4	55	0	0	0	0
	point33	33	183	55	3	55	4	55	0	0	0	0
	point34	34	183	55	3	55	4	55	0	0	0	0
	point35	35	183	55	3	55	4	55	0	0	0	0
	point36	36	183	55	3	55	4	55	0	0	0	0
	point37	37	183	55	3	55	4	55	0	0	0	0
	point38	38	183	55	3	55	4	55	0	0	0	0
	point39	39	183	55	3	55	4	55	0	0	0	0
	point40	40	183	55	3	55	4	55	0	0	0	0
	point41	41	183	55	3	55	4	55	0	0	0	0
	point42	42										
Rancho Vista EB | Division-3rd	point351	141	891	55	14	55	21	55	0	0	0	0
	point350	142	891	55	14	55	21	55	0	0	0	0
	point349	143	891	55	14	55	21	55	0	0	0	0
	point348	144	891	55	14	55	21	55	0	0	0	0
	point347	145	891	55	14	55	21	55	0	0	0	0
	point346	146	891	55	14	55	21	55	0	0	0	0
	point345	147	891	55	14	55	21	55	0	0	0	0
	point344	148	891	55	14	55	21	55	0	0	0	0
	point343	149	891	55	14	55	21	55	0	0	0	0
	point342	150	891	55	14	55	21	55	0	0	0	0
	point341	151	891	55	14	55	21	55	0	0	0	0
	point340	152	891	55	14	55	21	55	0	0	0	0
	point339	153	891	55	14	55	21	55	0	0	0	0
	point338	154										
Rancho Vista EB | 3rd-Sierra	point373	155	878	55	14	55	21	55	0	0	0	0
	point337	156	878	55	14	55	21	55	0	0	0	0
	point336	157	878	55	14	55	21	55	0	0	0	0
	point335	158	878	55	14	55	21	55	0	0	0	0
	point334	159	878	55	14	55	21	55	0	0	0	0
	point333	160	878	55	14	55	21	55	0	0	0	0
	point332	161										

Rancho Vista WB | Sierra-3rd	point370	162	1241	55	19	55	30	55	0	0	0	0
	point369	163	1241	55	19	55	30	55	0	0	0	0
	point368	164	1241	55	19	55	30	55	0	0	0	0
	point367	165	1241	55	19	55	30	55	0	0	0	0
	point366	166	1241	55	19	55	30	55	0	0	0	0
	point365	167										
Rancho Vista WB | 3rd-Division	point372	168	1265	55	20	55	30	55	0	0	0	0
	point364	169	1265	55	20	55	30	55	0	0	0	0
	point363	170	1265	55	20	55	30	55	0	0	0	0
	point362	171	1265	55	20	55	30	55	0	0	0	0
	point361	172	1265	55	20	55	30	55	0	0	0	0
	point360	173	1265	55	20	55	30	55	0	0	0	0
	point359	174	1265	55	20	55	30	55	0	0	0	0
	point358	175	1265	55	20	55	30	55	0	0	0	0
	point357	176	1265	55	20	55	30	55	0	0	0	0
	point356	177	1265	55	20	55	30	55	0	0	0	0
	point355	178	1265	55	20	55	30	55	0	0	0	0
	point354	179	1265	55	20	55	30	55	0	0	0	0
	point353	180	1265	55	20	55	30	55	0	0	0	0
	point371	181	1265	55	20	55	30	55	0	0	0	0
	point352	182										

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CM TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - No Grade

Barrier									Points											
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment					
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important	
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-	
				Area	Vol.			Length							ment				tions?	
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft					
Barrier2	W	0.00	99.99	0.00				0.00	point3	3	6,524,296.0	2,042,511.0	0.00	50.00	0.00	0	0			
									point4	4	6,524,263.0	2,042,511.0	0.00	50.00	0.00	0	0			
									point5	5	6,524,263.0	2,042,515.0	0.00	50.00	0.00	0	0			
									point6	6	6,524,203.0	2,042,515.0	0.00	50.00	0.00	0	0			
									point7	7	6,524,203.0	2,042,461.6	0.00	50.00	0.00	0	0			
									point8	8	6,523,575.5	2,042,461.6	0.00	50.00	0.00	0	0			
									point9	9	6,523,043.0	2,042,461.6	0.00	50.00	0.00	0	0			
									point10	10	6,523,043.0	2,042,515.6	0.00	50.00	0.00	0	0			
									point11	11	6,522,985.0	2,042,515.6	0.00	50.00	0.00	0	0			
									point12	12	6,522,985.0	2,042,511.6	0.00	50.00	0.00	0	0			
									point13	13	6,522,870.0	2,042,511.6	0.00	50.00	0.00	0	0			
									point14	14	6,522,870.0	2,042,459.6	0.00	50.00	0.00	0	0			
									point15	15	6,522,867.0	2,042,459.6	0.00	50.00	0.00	0	0			
									point16	16	6,522,867.0	2,042,423.6	0.00	50.00	0.00	0	0			
									point17	17	6,522,870.0	2,042,423.6	0.00	50.00	0.00	0	0			
									point18	18	6,522,870.0	2,042,399.0	0.00	50.00	0.00	0	0			
									point19	19	6,522,867.0	2,042,399.0	0.00	50.00	0.00	0	0			
									point20	20	6,522,867.0	2,042,249.0	0.00	50.00	0.00	0	0			
									point21	21	6,522,870.0	2,042,249.0	0.00	50.00	0.00	0	0			
									point22	22	6,522,870.0	2,042,009.0	0.00	50.00	0.00	0	0			
									point23	23	6,522,867.0	2,042,009.0	0.00	50.00	0.00	0	0			
									point24	24	6,522,867.0	2,041,859.0	0.00	50.00	0.00	0	0			
									point25	25	6,522,870.0	2,041,859.0	0.00	50.00	0.00	0	0			
									point26	26	6,522,870.0	2,041,769.0	0.00	50.00	0.00	0	0			
									point27	27	6,522,874.0	2,041,769.0	0.00	50.00	0.00	0	0			
									point28	28	6,522,874.0	2,041,735.6	0.00	50.00	0.00	0	0			
									point29	29	6,522,907.0	2,041,735.6	0.00	50.00	0.00	0	0			
									point30	30	6,522,907.0	2,041,731.6	0.00	50.00	0.00	0	0			
									point31	31	6,522,997.0	2,041,731.6	0.00	50.00	0.00	0	0			
									point32	32	6,522,997.0	2,041,727.6	0.00	50.00	0.00	0	0			
									point33	33	6,523,043.0	2,041,727.6	0.00	50.00	0.00	0	0			
									point34	34	6,523,043.0	2,041,781.6	0.00	50.00	0.00	0	0			
									point35	35	6,523,575.5	2,041,781.6	0.00	50.00	0.00	0	0			
									point36	36	6,524,203.0	2,041,781.6	0.00	50.00	0.00	0	0			
									point37	37	6,524,203.0	2,041,727.6	0.00	50.00	0.00	0	0			

									point38	38	6,524,223.0	2,041,727.6	0.00	50.00	0.00	0	0		
									point39	39	6,524,223.0	2,041,731.6	0.00	50.00	0.00	0	0		
									point40	40	6,524,303.0	2,041,731.6	0.00	50.00	0.00	0	0		
									point41	41	6,524,303.0	2,041,847.6	0.00	50.00	0.00	0	0		
									point42	42	6,524,306.0	2,041,847.6	0.00	50.00	0.00	0	0		
									point43	43	6,524,306.0	2,041,997.6	0.00	50.00	0.00	0	0		
									point44	44	6,524,303.0	2,041,997.6	0.00	50.00	0.00	0	0		
									point45	45	6,524,303.0	2,042,237.6	0.00	50.00	0.00	0	0		
									point46	46	6,524,306.0	2,042,237.6	0.00	50.00	0.00	0	0		
									point47	47	6,524,306.0	2,042,387.6	0.00	50.00	0.00	0	0		
									point48	48	6,524,300.0	2,042,387.6	0.00	50.00	0.00	0	0		
									point49	49	6,524,300.0	2,042,477.6	0.00	50.00	0.00	0	0		
									point50	50	6,524,296.0	2,042,477.6	0.00	50.00	0.00	0	0		
									point51	51	6,524,296.0	2,042,511.0	0.00	50.00					
Barrier3	W	0.00	99.99	0.00				0.00	point52	52	6,522,538.0	2,043,185.5	0.00	7.00	0.00	0	0		
									point53	53	6,522,536.5	2,043,001.2	0.00	7.00	0.00	0	0		
									point54	54	6,522,536.0	2,042,897.8	0.00	7.00	0.00	0	0		
									point55	55	6,522,428.5	2,042,894.0	0.00	7.00					
Barrier4	W	0.00	99.99	0.00				0.00	point56	56	6,521,625.5	2,042,727.2	0.00	7.00	0.00	0	0		
									point57	57	6,522,445.0	2,042,708.5	0.00	7.00	0.00	0	0		
									point58	58	6,522,534.5	2,042,705.8	0.00	7.00	0.00	0	0		
									point59	59	6,522,535.5	2,042,817.0	0.00	7.00					
Barrier5	W	0.00	99.99	0.00				0.00	point60	60	6,523,873.5	2,041,240.5	0.00	7.00	0.00	0	0		
									point61	61	6,523,875.5	2,041,308.6	0.00	7.00	0.00	0	0		
									point62	62	6,523,868.0	2,041,313.9	0.00	7.00	0.00	0	0		
									point63	63	6,523,850.0	2,041,322.5	0.00	7.00	0.00	0	0		
									point64	64	6,523,746.5	2,041,323.9	0.00	7.00	0.00	0	0		
									point65	65	6,523,327.5	2,041,325.2	0.00	7.00	0.00	0	0		
									point66	66	6,523,114.0	2,041,325.4	0.00	7.00	0.00	0	0		
									point67	67	6,522,896.0	2,041,325.9	0.00	7.00	0.00	0	0		
									point68	68	6,522,894.5	2,041,238.4	0.00	7.00					

Dudek
CM
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - No Grade
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

27 April 2025
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc		Calculated	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0
R2	2	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
R3	3	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
R4	4	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 28 February 2025
CM TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - No Grade

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Rancho Vista EB | Division-3rd	34.0	point155	155	6,522,536.5	2,041,368.0	0.00	Signal	0.00	66	Average	
		point154	154	6,522,636.5	2,041,367.8	0.00				Average	
		point153	153	6,522,736.5	2,041,366.6	0.00				Average	
		point152	152	6,522,836.5	2,041,366.5	0.00				Average	
		point151	151	6,522,936.5	2,041,366.2	0.00				Average	
		point150	150	6,523,036.5	2,041,365.9	0.00				Average	
		point149	149	6,523,136.5	2,041,365.5	0.00				Average	
		point148	148	6,523,236.5	2,041,365.0	0.00				Average	
		point147	147	6,523,336.5	2,041,364.6	0.00				Average	
		point146	146	6,523,436.5	2,041,364.4	0.00				Average	
		point145	145	6,523,536.5	2,041,364.4	0.00				Average	
		point144	144	6,523,636.5	2,041,364.5	0.00				Average	
		point143	143	6,523,736.5	2,041,364.5	0.00				Average	
		point142	142	6,523,836.5	2,041,364.2	0.00				Average	
		point141	141	6,523,865.0	2,041,364.1	0.00					
Rancho Vista EB | 3rd-Sierra	34.0	point161	161	6,523,865.0	2,041,364.1	0.00	Signal	0.00	50	Average	
		point160	160	6,523,965.0	2,041,364.0	0.00				Average	
		point159	159	6,524,065.0	2,041,363.8	0.00				Average	
		point158	158	6,524,165.0	2,041,364.0	0.00				Average	
		point157	157	6,524,265.0	2,041,364.4	0.00				Average	
		point156	156	6,524,365.0	2,041,364.6	0.00					
Rancho Vista WB | Sierra-3rd	34.0	point181	181	6,524,364.0	2,041,409.5	0.00				Average	
		point180	180	6,524,264.0	2,041,409.8	0.00				Average	
		point179	179	6,524,164.0	2,041,410.0	0.00				Average	
		point178	178	6,524,064.0	2,041,409.8	0.00				Average	

		point177	177	6,523,964.0	2,041,409.4	0.00					
RanchoVista Center	16.0	point182	182	6,524,371.5	2,041,387.9	0.00				Average	
		point183	183	6,524,275.5	2,041,387.4	0.00				Average	
		point184	184	6,524,181.5	2,041,387.9	0.00				Average	
		point185	185	6,524,081.5	2,041,388.0	0.00				Average	
		point186	186	6,523,981.5	2,041,388.1	0.00				Average	
		point187	187	6,523,881.5	2,041,388.1	0.00				Average	
		point188	188	6,523,781.5	2,041,388.4	0.00				Average	
		point189	189	6,523,681.5	2,041,388.6	0.00				Average	
		point190	190	6,523,581.5	2,041,388.9	0.00				Average	
		point191	191	6,523,481.5	2,041,389.1	0.00				Average	
		point192	192	6,523,381.5	2,041,389.2	0.00				Average	
		point193	193	6,523,281.5	2,041,389.5	0.00				Average	
		point194	194	6,523,181.5	2,041,389.8	0.00				Average	
		point195	195	6,523,081.5	2,041,389.9	0.00				Average	
		point196	196	6,522,981.5	2,041,390.1	0.00				Average	
		point197	197	6,522,881.5	2,041,390.2	0.00				Average	
		point198	198	6,522,781.5	2,041,390.4	0.00				Average	
		point199	199	6,522,681.5	2,041,390.6	0.00				Average	
		point200	200	6,522,581.5	2,041,390.8	0.00					
Division NB | RanchoVista-Driveway	40.0	point207	207	6,522,602.0	2,041,445.8	0.00	Signal	20.00	100	Average	
		point206	206	6,522,602.0	2,041,545.8	0.00				Average	
		point205	205	6,522,602.0	2,041,645.8	0.00				Average	
		point204	204	6,522,603.0	2,041,745.8	0.00				Average	
		point203	203	6,522,603.0	2,041,845.8	0.00				Average	
		point202	202	6,522,603.5	2,041,945.8	0.00				Average	
		point201	201	6,522,604.5	2,042,038.0	0.00					
Division NB | Driveway-OldDivision	40.0	point217	217	6,522,604.5	2,042,038.0	0.00	Signal	0.00	66	Average	
		point216	216	6,522,604.5	2,042,138.0	0.00				Average	
		point215	215	6,522,605.5	2,042,238.0	0.00				Average	
		point214	214	6,522,606.5	2,042,338.0	0.00				Average	
		point213	213	6,522,607.5	2,042,438.0	0.00				Average	
		point212	212	6,522,608.5	2,042,538.0	0.00				Average	
		point211	211	6,522,608.0	2,042,638.0	0.00				Average	
		point210	210	6,522,608.0	2,042,738.0	0.00				Average	
		point209	209	6,522,608.0	2,042,838.0	0.00				Average	
		point208	208	6,522,609.0	2,042,938.0	0.00					
Division SB | OldDivision-Driveway	40.0	point227	227	6,522,569.5	2,042,939.0	0.00				Average	
		point226	226	6,522,568.0	2,042,839.0	0.00				Average	

		point225	225	6,522,566.5	2,042,739.1	0.00				Average	
		point224	224	6,522,565.5	2,042,639.1	0.00				Average	
		point223	223	6,522,564.5	2,042,539.1	0.00				Average	
		point222	222	6,522,564.5	2,042,439.1	0.00				Average	
		point221	221	6,522,563.5	2,042,339.1	0.00				Average	
		point220	220	6,522,562.5	2,042,239.1	0.00				Average	
		point219	219	6,522,562.0	2,042,139.1	0.00				Average	
		point218	218	6,522,562.0	2,042,119.6	0.00					
Division SB | Driveway-Division	40.0	point235	235	6,522,562.0	2,042,119.6	0.00	Signal	0.00	66	Average	
		point234	234	6,522,561.0	2,042,019.8	0.00				Average	
		point233	233	6,522,560.5	2,041,919.8	0.00				Average	
		point232	232	6,522,560.0	2,041,819.8	0.00				Average	
		point231	231	6,522,559.5	2,041,719.8	0.00				Average	
		point230	230	6,522,559.0	2,041,619.8	0.00				Average	
		point229	229	6,522,558.0	2,041,519.8	0.00				Average	
		point228	228	6,522,558.0	2,041,442.6	0.00					
Old Division NB	13.0	point272	272	6,522,609.0	2,042,938.0	0.00				Average	
		point6	268	6,522,589.0	2,043,016.2	0.00				Average	
		point5	269	6,522,589.0	2,043,116.2	0.00				Average	
		point4	270	6,522,590.0	2,043,216.2	0.00				Average	
		point3	271	6,522,591.0	2,043,316.2	0.00					
Old Division SB	13.0	point23	273	6,522,573.5	2,043,314.0	0.00				Average	
		point24	274	6,522,573.0	2,043,214.0	0.00				Average	
		point25	275	6,522,573.0	2,043,114.0	0.00				Average	
		point26	276	6,522,574.0	2,043,014.1	0.00				Average	
		point27	277	6,522,569.5	2,042,939.0	0.00					
Rancho Vista WB | 3rd-Division	34.0	point294	294	6,523,964.0	2,041,409.4	0.00	Signal	0.00	50	Average	
		point176	176	6,523,864.0	2,041,410.1	0.00				Average	
		point175	175	6,523,764.0	2,041,410.9	0.00				Average	
		point174	174	6,523,664.0	2,041,411.2	0.00				Average	
		point173	173	6,523,564.0	2,041,411.8	0.00				Average	
		point172	172	6,523,464.0	2,041,412.2	0.00				Average	
		point171	171	6,523,364.0	2,041,412.8	0.00				Average	
		point170	170	6,523,264.0	2,041,412.9	0.00				Average	
		point169	169	6,523,164.0	2,041,413.0	0.00				Average	
		point168	168	6,523,064.0	2,041,412.9	0.00				Average	
		point167	167	6,522,964.0	2,041,412.6	0.00				Average	
		point166	166	6,522,864.0	2,041,412.6	0.00				Average	
		point165	165	6,522,764.0	2,041,412.8	0.00				Average	

		point164	164	6,522,664.0	2,041,412.9	0.00				Average	
		point163	163	6,522,564.0	2,041,413.0	0.00				Average	
		point162	162	6,522,485.0	2,041,413.1	0.00					
Division Center	13.0	point295	295	6,522,581.0	2,041,441.1	0.00				Average	
		point296	296	6,522,581.5	2,041,541.1	0.00				Average	
		point297	297	6,522,582.0	2,041,641.1	0.00				Average	
		point298	298	6,522,582.5	2,041,741.1	0.00				Average	
		point299	299	6,522,583.5	2,041,841.1	0.00				Average	
		point300	300	6,522,584.0	2,041,941.1	0.00				Average	
		point301	301	6,522,584.5	2,042,041.1	0.00				Average	
		point302	302	6,522,585.5	2,042,141.1	0.00				Average	
		point303	303	6,522,586.0	2,042,241.1	0.00				Average	
		point304	304	6,522,587.0	2,042,341.1	0.00				Average	
		point305	305	6,522,587.5	2,042,441.1	0.00				Average	
		point306	306	6,522,588.0	2,042,541.1	0.00				Average	
		point307	307	6,522,588.5	2,042,641.1	0.00				Average	
		point308	308	6,522,589.0	2,042,741.1	0.00				Average	
		point309	309	6,522,590.0	2,042,841.1	0.00				Average	
		point310	310	6,522,590.5	2,042,941.1	0.00					
O12 EB	42.0	point317	317	6,522,611.5	2,042,701.4	0.00				Average	
		point316	316	6,522,711.5	2,042,702.1	0.00				Average	
		point315	315	6,522,811.5	2,042,702.1	0.00				Average	
		point314	314	6,522,911.5	2,042,702.1	0.00				Average	
		point313	313	6,523,011.5	2,042,702.1	0.00					
O12 WB	42.0	point322	322	6,523,011.5	2,042,732.1	0.00				Average	
		point321	321	6,522,911.5	2,042,732.1	0.00				Average	
		point320	320	6,522,811.5	2,042,732.1	0.00				Average	
		point319	319	6,522,711.5	2,042,732.1	0.00				Average	
		point318	318	6,522,611.5	2,042,732.1	0.00					
Q12 center	13.0	point327	327	6,523,011.5	2,042,717.1	0.00				Average	
		point328	328	6,522,911.5	2,042,717.1	0.00				Average	
		point329	329	6,522,811.5	2,042,717.1	0.00				Average	
		point330	330	6,522,711.5	2,042,717.2	0.00				Average	
		point331	331	6,522,611.5	2,042,717.2	0.00					

Dudek 28 February 2025
CM TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - No Grade

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	6,522,525.0	2,042,942.1	0.00	4.92	0.00	66	10.0	8.0	Y
R2	2	1	6,522,517.5	2,042,732.2	0.00	4.92	0.00	66	10.0	8.0	Y
R3	3	1	6,522,926.0	2,041,305.6	0.00	4.92	0.00	66	10.0	8.0	Y
R4	4	1	6,523,842.0	2,041,316.4	0.00	4.92	0.00	66	10.0	8.0	Y

Dudek 27 April 2025
CM TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - No Grade

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Rancho Vista EB | Division-3rd	point155	155	989	55	18	55	33	55	0	0	0	0
	point154	154	989	55	18	55	33	55	0	0	0	0
	point153	153	989	55	18	55	33	55	0	0	0	0
	point152	152	989	55	18	55	33	55	0	0	0	0
	point151	151	989	55	18	55	33	55	0	0	0	0
	point150	150	989	55	18	55	33	55	0	0	0	0
	point149	149	989	55	18	55	33	55	0	0	0	0
	point148	148	989	55	18	55	33	55	0	0	0	0
	point147	147	989	55	18	55	33	55	0	0	0	0
	point146	146	989	55	18	55	33	55	0	0	0	0
	point145	145	989	55	18	55	33	55	0	0	0	0
	point144	144	989	55	18	55	33	55	0	0	0	0
	point143	143	989	55	18	55	33	55	0	0	0	0
	point142	142	989	55	18	55	33	55	0	0	0	0
	point141	141										
Rancho Vista EB | 3rd-Sierra	point161	161	1369	55	24	55	43	55	0	0	0	0
	point160	160	1369	55	24	55	43	55	0	0	0	0
	point159	159	1369	55	24	55	43	55	0	0	0	0
	point158	158	1369	55	24	55	43	55	0	0	0	0
	point157	157	1369	55	24	55	43	55	0	0	0	0
	point156	156										
Rancho Vista WB | Sierra-3rd	point181	181	1641	55	28	55	49	55	0	0	0	0
	point180	180	1641	55	28	55	49	55	0	0	0	0

	point179	179	1641	55	28	55	49	55	0	0	0	0
	point178	178	1641	55	28	55	49	55	0	0	0	0
	point177	177										
RanchoVista Center	point182	182	0	0	0	0	0	0	0	0	0	0
	point183	183	0	0	0	0	0	0	0	0	0	0
	point184	184	0	0	0	0	0	0	0	0	0	0
	point185	185	0	0	0	0	0	0	0	0	0	0
	point186	186	0	0	0	0	0	0	0	0	0	0
	point187	187	0	0	0	0	0	0	0	0	0	0
	point188	188	0	0	0	0	0	0	0	0	0	0
	point189	189	0	0	0	0	0	0	0	0	0	0
	point190	190	0	0	0	0	0	0	0	0	0	0
	point191	191	0	0	0	0	0	0	0	0	0	0
	point192	192	0	0	0	0	0	0	0	0	0	0
	point193	193	0	0	0	0	0	0	0	0	0	0
	point194	194	0	0	0	0	0	0	0	0	0	0
	point195	195	0	0	0	0	0	0	0	0	0	0
	point196	196	0	0	0	0	0	0	0	0	0	0
	point197	197	0	0	0	0	0	0	0	0	0	0
	point198	198	0	0	0	0	0	0	0	0	0	0
	point199	199	0	0	0	0	0	0	0	0	0	0
	point200	200										
Division NB | RanchoVista-Driveway	point207	207	317	55	8	55	17	55	0	0	0	0
	point206	206	317	55	8	55	17	55	0	0	0	0
	point205	205	317	55	8	55	17	55	0	0	0	0
	point204	204	317	55	8	55	17	55	0	0	0	0
	point203	203	317	55	8	55	17	55	0	0	0	0
	point202	202	317	55	8	55	17	55	0	0	0	0
	point201	201										
Division NB | Driveway-OldDivision	point217	217	303	55	7	55	17	55	0	0	0	0
	point216	216	303	55	7	55	17	55	0	0	0	0
	point215	215	303	55	7	55	17	55	0	0	0	0
	point214	214	303	55	7	55	17	55	0	0	0	0
	point213	213	303	55	7	55	17	55	0	0	0	0
	point212	212	303	55	7	55	17	55	0	0	0	0
	point211	211	303	55	7	55	17	55	0	0	0	0

	point210	210	303	55	7	55	17	55	0	0	0	0
	point209	209	303	55	7	55	17	55	0	0	0	0
	point208	208										
Division SB | OldDivision-Driveway	point227	227	299	55	7	55	17	55	0	0	0	0
	point226	226	299	55	7	55	17	55	0	0	0	0
	point225	225	299	55	7	55	17	55	0	0	0	0
	point224	224	299	55	7	55	17	55	0	0	0	0
	point223	223	299	55	7	55	17	55	0	0	0	0
	point222	222	299	55	7	55	17	55	0	0	0	0
	point221	221	299	55	7	55	17	55	0	0	0	0
	point220	220	299	55	7	55	17	55	0	0	0	0
	point219	219	299	55	7	55	17	55	0	0	0	0
	point218	218										
Division SB | Driveway-Division	point235	235	330	55	8	55	18	55	0	0	0	0
	point234	234	330	55	8	55	18	55	0	0	0	0
	point233	233	330	55	8	55	18	55	0	0	0	0
	point232	232	330	55	8	55	18	55	0	0	0	0
	point231	231	330	55	8	55	18	55	0	0	0	0
	point230	230	330	55	8	55	18	55	0	0	0	0
	point229	229	330	55	8	55	18	55	0	0	0	0
	point228	228										
Old Division NB	point272	272	301	55	7	55	17	55	0	0	0	0
	point6	268	301	55	7	55	17	55	0	0	0	0
	point5	269	301	55	7	55	17	55	0	0	0	0
	point4	270	301	55	7	55	17	55	0	0	0	0
	point3	271										
Old Division SB	point23	273	275	55	7	55	16	55	0	0	0	0
	point24	274	275	55	7	55	16	55	0	0	0	0
	point25	275	275	55	7	55	16	55	0	0	0	0
	point26	276	275	55	7	55	16	55	0	0	0	0
	point27	277										
Rancho Vista WB | 3rd-Division	point294	294	1298	55	23	55	41	55	0	0	0	0
	point176	176	1298	55	23	55	41	55	0	0	0	0
	point175	175	1298	55	23	55	41	55	0	0	0	0
	point174	174	1298	55	23	55	41	55	0	0	0	0
	point173	173	1298	55	23	55	41	55	0	0	0	0

	point172	172	1298	55	23	55	41	55	0	0	0	0
	point171	171	1298	55	23	55	41	55	0	0	0	0
	point170	170	1298	55	23	55	41	55	0	0	0	0
	point169	169	1298	55	23	55	41	55	0	0	0	0
	point168	168	1298	55	23	55	41	55	0	0	0	0
	point167	167	1298	55	23	55	41	55	0	0	0	0
	point166	166	1298	55	23	55	41	55	0	0	0	0
	point165	165	1298	55	23	55	41	55	0	0	0	0
	point164	164	1298	55	23	55	41	55	0	0	0	0
	point163	163	1298	55	23	55	41	55	0	0	0	0
	point162	162										
Division Center	point295	295	0	0	0	0	0	0	0	0	0	0
	point296	296	0	0	0	0	0	0	0	0	0	0
	point297	297	0	0	0	0	0	0	0	0	0	0
	point298	298	0	0	0	0	0	0	0	0	0	0
	point299	299	0	0	0	0	0	0	0	0	0	0
	point300	300	0	0	0	0	0	0	0	0	0	0
	point301	301	0	0	0	0	0	0	0	0	0	0
	point302	302	0	0	0	0	0	0	0	0	0	0
	point303	303	0	0	0	0	0	0	0	0	0	0
	point304	304	0	0	0	0	0	0	0	0	0	0
	point305	305	0	0	0	0	0	0	0	0	0	0
	point306	306	0	0	0	0	0	0	0	0	0	0
	point307	307	0	0	0	0	0	0	0	0	0	0
	point308	308	0	0	0	0	0	0	0	0	0	0
	point309	309	0	0	0	0	0	0	0	0	0	0
	point310	310										
O12 EB	point317	317	110	55	4	55	12	55	0	0	0	0
	point316	316	110	55	4	55	12	55	0	0	0	0
	point315	315	110	55	4	55	12	55	0	0	0	0
	point314	314	110	55	4	55	12	55	0	0	0	0
	point313	313										
O12 WB	point322	322	133	55	5	55	13	55	0	0	0	0
	point321	321	133	55	5	55	13	55	0	0	0	0
	point320	320	133	55	5	55	13	55	0	0	0	0
	point319	319	133	55	5	55	13	55	0	0	0	0

	point318	318										
Q12 center	point327	327	0	0	0	0	0	0	0	0	0	0
	point328	328	0	0	0	0	0	0	0	0	0	0
	point329	329	0	0	0	0	0	0	0	0	0	0
	point330	330	0	0	0	0	0	0	0	0	0	0
	point331	331										

Dudek 28 February 2025
CM TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - With Grade

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier2	W	0.00	99.99	0.00				0.00	point3	3	6,524,296.0	2,042,511.0	0.00	50.00	0.00	0	0		
									point4	4	6,524,263.0	2,042,511.0	0.00	50.00	0.00	0	0		
									point5	5	6,524,263.0	2,042,515.0	0.00	50.00	0.00	0	0		
									point6	6	6,524,203.0	2,042,515.0	0.00	50.00	0.00	0	0		
									point7	7	6,524,203.0	2,042,461.6	0.00	50.00	0.00	0	0		
									point8	8	6,523,575.5	2,042,461.6	0.00	50.00	0.00	0	0		
									point9	9	6,523,043.0	2,042,461.6	0.00	50.00	0.00	0	0		
									point10	10	6,523,043.0	2,042,515.6	0.00	50.00	0.00	0	0		
									point11	11	6,522,985.0	2,042,515.6	0.00	50.00	0.00	0	0		
									point12	12	6,522,985.0	2,042,511.6	0.00	50.00	0.00	0	0		
									point13	13	6,522,870.0	2,042,511.6	0.00	50.00	0.00	0	0		
									point14	14	6,522,870.0	2,042,459.6	0.00	50.00	0.00	0	0		
									point15	15	6,522,867.0	2,042,459.6	0.00	50.00	0.00	0	0		
									point16	16	6,522,867.0	2,042,423.6	0.00	50.00	0.00	0	0		
									point17	17	6,522,870.0	2,042,423.6	0.00	50.00	0.00	0	0		
									point18	18	6,522,870.0	2,042,399.0	0.00	50.00	0.00	0	0		
									point19	19	6,522,867.0	2,042,399.0	0.00	50.00	0.00	0	0		
									point20	20	6,522,867.0	2,042,249.0	0.00	50.00	0.00	0	0		
									point21	21	6,522,870.0	2,042,249.0	0.00	50.00	0.00	0	0		
									point22	22	6,522,870.0	2,042,009.0	0.00	50.00	0.00	0	0		
									point23	23	6,522,867.0	2,042,009.0	0.00	50.00	0.00	0	0		
									point24	24	6,522,867.0	2,041,859.0	0.00	50.00	0.00	0	0		
									point25	25	6,522,870.0	2,041,859.0	0.00	50.00	0.00	0	0		
									point26	26	6,522,870.0	2,041,769.0	0.00	50.00	0.00	0	0		
									point27	27	6,522,874.0	2,041,769.0	0.00	50.00	0.00	0	0		
									point28	28	6,522,874.0	2,041,735.6	0.00	50.00	0.00	0	0		
									point29	29	6,522,907.0	2,041,735.6	0.00	50.00	0.00	0	0		
									point30	30	6,522,907.0	2,041,731.6	0.00	50.00	0.00	0	0		
									point31	31	6,522,997.0	2,041,731.6	0.00	50.00	0.00	0	0		
									point32	32	6,522,997.0	2,041,727.6	0.00	50.00	0.00	0	0		
									point33	33	6,523,043.0	2,041,727.6	0.00	50.00	0.00	0	0		
									point34	34	6,523,043.0	2,041,781.6	0.00	50.00	0.00	0	0		
									point35	35	6,523,575.5	2,041,781.6	0.00	50.00	0.00	0	0		
									point36	36	6,524,203.0	2,041,781.6	0.00	50.00	0.00	0	0		
									point37	37	6,524,203.0	2,041,727.6	0.00	50.00	0.00	0	0		

									point38	38	6,524,223.0	2,041,727.6	0.00	50.00	0.00	0	0		
									point39	39	6,524,223.0	2,041,731.6	0.00	50.00	0.00	0	0		
									point40	40	6,524,303.0	2,041,731.6	0.00	50.00	0.00	0	0		
									point41	41	6,524,303.0	2,041,847.6	0.00	50.00	0.00	0	0		
									point42	42	6,524,306.0	2,041,847.6	0.00	50.00	0.00	0	0		
									point43	43	6,524,306.0	2,041,997.6	0.00	50.00	0.00	0	0		
									point44	44	6,524,303.0	2,041,997.6	0.00	50.00	0.00	0	0		
									point45	45	6,524,303.0	2,042,237.6	0.00	50.00	0.00	0	0		
									point46	46	6,524,306.0	2,042,237.6	0.00	50.00	0.00	0	0		
									point47	47	6,524,306.0	2,042,387.6	0.00	50.00	0.00	0	0		
									point48	48	6,524,300.0	2,042,387.6	0.00	50.00	0.00	0	0		
									point49	49	6,524,300.0	2,042,477.6	0.00	50.00	0.00	0	0		
									point50	50	6,524,296.0	2,042,477.6	0.00	50.00	0.00	0	0		
									point51	51	6,524,296.0	2,042,511.0	0.00	50.00					
Barrier3	W	0.00	99.99	0.00				0.00	point52	52	6,522,538.0	2,043,185.5	0.00	7.00	0.00	0	0		
									point53	53	6,522,536.5	2,043,001.2	0.00	7.00	0.00	0	0		
									point54	54	6,522,536.0	2,042,897.8	0.00	7.00	0.00	0	0		
									point55	55	6,522,428.5	2,042,894.0	0.00	7.00					
Barrier4	W	0.00	99.99	0.00				0.00	point56	56	6,521,625.5	2,042,727.2	0.00	7.00	0.00	0	0		
									point57	57	6,522,445.0	2,042,708.5	0.00	7.00	0.00	0	0		
									point58	58	6,522,534.5	2,042,705.8	0.00	7.00	0.00	0	0		
									point59	59	6,522,535.5	2,042,817.0	0.00	7.00					
Barrier5	W	0.00	99.99	0.00				0.00	point60	60	6,523,873.5	2,041,240.5	0.00	7.00	0.00	0	0		
									point61	61	6,523,875.5	2,041,308.6	0.00	7.00	0.00	0	0		
									point62	62	6,523,868.0	2,041,313.9	0.00	7.00	0.00	0	0		
									point63	63	6,523,850.0	2,041,322.5	0.00	7.00	0.00	0	0		
									point64	64	6,523,746.5	2,041,323.9	0.00	7.00	0.00	0	0		
									point65	65	6,523,327.5	2,041,325.2	0.00	7.00	0.00	0	0		
									point66	66	6,523,114.0	2,041,325.4	0.00	7.00	0.00	0	0		
									point67	67	6,522,896.0	2,041,325.9	0.00	7.00	0.00	0	0		
									point68	68	6,522,894.5	2,041,238.4	0.00	7.00					

Dudek
CM
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - With Grade
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

27 April 2025
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc					
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0
R2	2	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
R3	3	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
R4	4	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 28 February 2025
CM TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - With Grade

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Division NB | RanchoVista-Driveway	40.0	point207	207	6,522,602.0	2,041,445.8	0.00	Signal	20.00	100	Average	
		point206	206	6,522,602.0	2,041,545.8	0.00				Average	
		point205	205	6,522,602.0	2,041,645.8	0.00				Average	
		point204	204	6,522,603.0	2,041,745.8	0.00				Average	
		point203	203	6,522,603.0	2,041,845.8	0.00				Average	
		point202	202	6,522,603.5	2,041,945.8	0.00				Average	
		point201	201	6,522,604.5	2,042,038.0	0.00					
Division NB | Driveway-OldDivision	40.0	point217	217	6,522,604.5	2,042,038.0	0.00	Signal	0.00	66	Average	
		point216	216	6,522,604.5	2,042,138.0	0.00				Average	
		point215	215	6,522,605.5	2,042,238.0	0.00				Average	
		point214	214	6,522,606.5	2,042,338.0	0.00				Average	
		point213	213	6,522,607.5	2,042,438.0	0.00				Average	
		point212	212	6,522,608.5	2,042,538.0	0.00				Average	
		point211	211	6,522,608.0	2,042,638.0	0.00				Average	
		point210	210	6,522,608.0	2,042,738.0	0.00				Average	
		point209	209	6,522,608.0	2,042,838.0	0.00				Average	
		point208	208	6,522,609.0	2,042,938.0	0.00					
Division SB | OldDivision-Driveway	40.0	point227	227	6,522,569.5	2,042,939.0	0.00				Average	
		point226	226	6,522,568.0	2,042,839.0	0.00				Average	
		point225	225	6,522,566.5	2,042,739.1	0.00				Average	
		point224	224	6,522,565.5	2,042,639.1	0.00				Average	
		point223	223	6,522,564.5	2,042,539.1	0.00				Average	
		point222	222	6,522,564.5	2,042,439.1	0.00				Average	
		point221	221	6,522,563.5	2,042,339.1	0.00				Average	
		point220	220	6,522,562.5	2,042,239.1	0.00				Average	

		point219	219	6,522,562.0	2,042,139.1	0.00				Average	
		point218	218	6,522,562.0	2,042,119.6	0.00					
Division SB | Driveway-Division	40.0	point235	235	6,522,562.0	2,042,119.6	0.00	Signal	0.00	66	Average	
		point234	234	6,522,561.0	2,042,019.8	0.00				Average	
		point233	233	6,522,560.5	2,041,919.8	0.00				Average	
		point232	232	6,522,560.0	2,041,819.8	0.00				Average	
		point231	231	6,522,559.5	2,041,719.8	0.00				Average	
		point230	230	6,522,559.0	2,041,619.8	0.00				Average	
		point229	229	6,522,558.0	2,041,519.8	0.00				Average	
		point228	228	6,522,558.0	2,041,442.6	0.00					
Old Division NB	13.0	point272	272	6,522,609.0	2,042,938.0	0.00				Average	
		point6	268	6,522,589.0	2,043,016.2	0.00				Average	
		point5	269	6,522,589.0	2,043,116.2	0.00				Average	
		point4	270	6,522,590.0	2,043,216.2	0.00				Average	
		point3	271	6,522,591.0	2,043,316.2	0.00					
Old Division SB	13.0	point23	273	6,522,573.5	2,043,314.0	0.00				Average	
		point24	274	6,522,573.0	2,043,214.0	0.00				Average	
		point25	275	6,522,573.0	2,043,114.0	0.00				Average	
		point26	276	6,522,574.0	2,043,014.1	0.00				Average	
		point27	277	6,522,569.5	2,042,939.0	0.00					
Division Center	13.0	point295	295	6,522,581.0	2,041,441.1	0.00				Average	
		point296	296	6,522,581.5	2,041,541.1	0.00				Average	
		point297	297	6,522,582.0	2,041,641.1	0.00				Average	
		point298	298	6,522,582.5	2,041,741.1	0.00				Average	
		point299	299	6,522,583.5	2,041,841.1	0.00				Average	
		point300	300	6,522,584.0	2,041,941.1	0.00				Average	
		point301	301	6,522,584.5	2,042,041.1	0.00				Average	
		point302	302	6,522,585.5	2,042,141.1	0.00				Average	
		point303	303	6,522,586.0	2,042,241.1	0.00				Average	
		point304	304	6,522,587.0	2,042,341.1	0.00				Average	
		point305	305	6,522,587.5	2,042,441.1	0.00				Average	
		point306	306	6,522,588.0	2,042,541.1	0.00				Average	
		point307	307	6,522,588.5	2,042,641.1	0.00				Average	
		point308	308	6,522,589.0	2,042,741.1	0.00				Average	
		point309	309	6,522,590.0	2,042,841.1	0.00				Average	
		point310	310	6,522,590.5	2,042,941.1	0.00					
O12 EB	42.0	point317	317	6,522,611.5	2,042,701.4	0.00				Average	
		point316	316	6,522,711.5	2,042,702.1	0.00				Average	
		point315	315	6,522,811.5	2,042,702.1	0.00				Average	

		point314	314	6,522,911.5	2,042,702.1	0.00				Average	
		point313	313	6,523,011.5	2,042,702.1	0.00					
O12 WB	42.0	point322	322	6,523,011.5	2,042,732.1	0.00				Average	
		point321	321	6,522,911.5	2,042,732.1	0.00				Average	
		point320	320	6,522,811.5	2,042,732.1	0.00				Average	
		point319	319	6,522,711.5	2,042,732.1	0.00				Average	
		point318	318	6,522,611.5	2,042,732.1	0.00					
Q12 center	13.0	point327	327	6,523,011.5	2,042,717.1	0.00				Average	
		point328	328	6,522,911.5	2,042,717.1	0.00				Average	
		point329	329	6,522,811.5	2,042,717.1	0.00				Average	
		point330	330	6,522,711.5	2,042,717.2	0.00				Average	
		point331	331	6,522,611.5	2,042,717.2	0.00					
Rancho Vista EB | Division-3rd	60.0	point351	351	6,522,555.5	2,041,377.5	0.00	Signal	15.00	66	Average	
		point350	350	6,522,655.5	2,041,377.2	0.00				Average	
		point349	349	6,522,755.5	2,041,376.8	0.00				Average	
		point348	348	6,522,855.5	2,041,376.0	0.00				Average	
		point347	347	6,522,955.5	2,041,375.6	0.00				Average	
		point346	346	6,523,055.5	2,041,374.9	0.00				Average	
		point345	345	6,523,155.5	2,041,374.5	0.00				Average	
		point344	344	6,523,255.5	2,041,374.4	0.00				Average	
		point343	343	6,523,355.5	2,041,376.0	0.00				Average	
		point342	342	6,523,455.5	2,041,377.6	0.00				Average	
		point341	341	6,523,555.5	2,041,382.5	0.00				Average	
		point340	340	6,523,655.0	2,041,390.5	0.00				Average	
		point339	339	6,523,755.0	2,041,398.1	0.00				Average	
		point338	338	6,523,854.0	2,041,410.5	0.00					
Rancho Vista WB | Sierra-3rd	60.0	point370	370	6,524,432.5	2,041,551.4	0.00	Signal	15.00	50	Average	
		point369	369	6,524,333.5	2,041,536.9	0.00				Average	
		point368	368	6,524,234.5	2,041,522.4	0.00				Average	
		point367	367	6,524,136.0	2,041,505.4	0.00				Average	
		point366	366	6,524,037.0	2,041,490.0	0.00				Average	
		point365	365	6,523,938.0	2,041,476.2	0.00					
Rancho Vista WB | 3rd-Division	60.0	point372	372	6,523,938.0	2,041,476.2	0.00	Signal	0.00	50	Average	
		point364	364	6,523,839.0	2,041,462.5	0.00				Average	
		point363	363	6,523,739.5	2,041,453.8	0.00				Average	
		point362	362	6,523,640.0	2,041,443.9	0.00				Average	
		point361	361	6,523,540.0	2,041,436.1	0.00				Average	
		point360	360	6,523,440.5	2,041,429.8	0.00				Average	
		point359	359	6,523,340.5	2,041,429.8	0.00				Average	

		point358	358	6,523,240.5	2,041,429.8	0.00				Average	
		point357	357	6,523,140.5	2,041,429.8	0.00				Average	
		point356	356	6,523,040.5	2,041,429.8	0.00				Average	
		point355	355	6,522,940.5	2,041,429.8	0.00				Average	
		point354	354	6,522,840.5	2,041,429.8	0.00				Average	
		point353	353	6,522,740.5	2,041,429.8	0.00				Average	
		point371	371	6,522,648.0	2,041,430.5	0.00				Average	
		point352	352	6,522,555.5	2,041,431.1	0.00					
Rancho Vista EB | 3rd-Sierra	60.0	point373	373	6,523,854.0	2,041,410.5	0.00	Signal	0.00	50	Average	
		point337	337	6,523,953.5	2,041,422.6	0.00				Average	
		point336	336	6,524,052.5	2,041,436.1	0.00				Average	
		point335	335	6,524,151.0	2,041,452.2	0.00				Average	
		point334	334	6,524,250.0	2,041,467.0	0.00				Average	
		point333	333	6,524,348.5	2,041,483.1	0.00				Average	
		point332	332	6,524,444.0	2,041,497.4	0.00					

Dudek 28 February 2025
CM TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - With Grade

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	6,522,525.0	2,042,942.1	0.00	4.92	0.00	66	10.0	8.0	Y
R2	2	1	6,522,517.5	2,042,732.2	0.00	4.92	0.00	66	10.0	8.0	Y
R3	3	1	6,522,926.0	2,041,305.6	0.00	4.92	0.00	66	10.0	8.0	Y
R4	4	1	6,523,842.0	2,041,316.4	0.00	4.92	0.00	66	10.0	8.0	Y

Dudek 27 April 2025
CM TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Pacific Palmdale Center
RUN: Opening Year - With Project - With Grade

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Division NB | RanchoVista-Driveway	point207	207	315	55	7	55	17	55	0	0	0	0
	point206	206	315	55	7	55	17	55	0	0	0	0
	point205	205	315	55	7	55	17	55	0	0	0	0
	point204	204	315	55	7	55	17	55	0	0	0	0
	point203	203	315	55	7	55	17	55	0	0	0	0
	point202	202	315	55	7	55	17	55	0	0	0	0
	point201	201										
Division NB | Driveway-OldDivision	point217	217	320	55	8	55	17	55	0	0	0	0
	point216	216	320	55	8	55	17	55	0	0	0	0
	point215	215	320	55	8	55	17	55	0	0	0	0
	point214	214	320	55	8	55	17	55	0	0	0	0
	point213	213	320	55	8	55	17	55	0	0	0	0
	point212	212	320	55	8	55	17	55	0	0	0	0
	point211	211	320	55	8	55	17	55	0	0	0	0
	point210	210	320	55	8	55	17	55	0	0	0	0
	point209	209	320	55	8	55	17	55	0	0	0	0
	point208	208										
Division SB | OldDivision-Driveway	point227	227	289	55	7	55	17	55	0	0	0	0
	point226	226	289	55	7	55	17	55	0	0	0	0
	point225	225	289	55	7	55	17	55	0	0	0	0
	point224	224	289	55	7	55	17	55	0	0	0	0
	point223	223	289	55	7	55	17	55	0	0	0	0
	point222	222	289	55	7	55	17	55	0	0	0	0

	point221	221	289	55	7	55	17	55	0	0	0	0
	point220	220	289	55	7	55	17	55	0	0	0	0
	point219	219	289	55	7	55	17	55	0	0	0	0
	point218	218										
Division SB | Driveway-Division	point235	235	315	55	7	55	17	55	0	0	0	0
	point234	234	315	55	7	55	17	55	0	0	0	0
	point233	233	315	55	7	55	17	55	0	0	0	0
	point232	232	315	55	7	55	17	55	0	0	0	0
	point231	231	315	55	7	55	17	55	0	0	0	0
	point230	230	315	55	7	55	17	55	0	0	0	0
	point229	229	315	55	7	55	17	55	0	0	0	0
	point228	228										
Old Division NB	point272	272	320	55	8	55	17	55	0	0	0	0
	point6	268	320	55	8	55	17	55	0	0	0	0
	point5	269	320	55	8	55	17	55	0	0	0	0
	point4	270	320	55	8	55	17	55	0	0	0	0
	point3	271										
Old Division SB	point23	273	275	55	7	55	16	55	0	0	0	0
	point24	274	275	55	7	55	16	55	0	0	0	0
	point25	275	275	55	7	55	16	55	0	0	0	0
	point26	276	275	55	7	55	16	55	0	0	0	0
	point27	277										
Division Center	point295	295	0	0	0	0	0	0	0	0	0	0
	point296	296	0	0	0	0	0	0	0	0	0	0
	point297	297	0	0	0	0	0	0	0	0	0	0
	point298	298	0	0	0	0	0	0	0	0	0	0
	point299	299	0	0	0	0	0	0	0	0	0	0
	point300	300	0	0	0	0	0	0	0	0	0	0
	point301	301	0	0	0	0	0	0	0	0	0	0
	point302	302	0	0	0	0	0	0	0	0	0	0
	point303	303	0	0	0	0	0	0	0	0	0	0
	point304	304	0	0	0	0	0	0	0	0	0	0
	point305	305	0	0	0	0	0	0	0	0	0	0
	point306	306	0	0	0	0	0	0	0	0	0	0
	point307	307	0	0	0	0	0	0	0	0	0	0
	point308	308	0	0	0	0	0	0	0	0	0	0

	point309	309	0	0	0	0	0	0	0	0	0	0
	point310	310										
O12 EB	point317	317	106	55	4	55	12	55	0	0	0	0
	point316	316	106	55	4	55	12	55	0	0	0	0
	point315	315	106	55	4	55	12	55	0	0	0	0
	point314	314	106	55	4	55	12	55	0	0	0	0
	point313	313										
O12 WB	point322	322	134	55	5	55	13	55	0	0	0	0
	point321	321	134	55	5	55	13	55	0	0	0	0
	point320	320	134	55	5	55	13	55	0	0	0	0
	point319	319	134	55	5	55	13	55	0	0	0	0
	point318	318										
Q12 center	point327	327	0	0	0	0	0	0	0	0	0	0
	point328	328	0	0	0	0	0	0	0	0	0	0
	point329	329	0	0	0	0	0	0	0	0	0	0
	point330	330	0	0	0	0	0	0	0	0	0	0
	point331	331										
Rancho Vista EB | Division-3rd	point351	351	974	55	18	55	33	55	0	0	0	0
	point350	350	974	55	18	55	33	55	0	0	0	0
	point349	349	974	55	18	55	33	55	0	0	0	0
	point348	348	974	55	18	55	33	55	0	0	0	0
	point347	347	974	55	18	55	33	55	0	0	0	0
	point346	346	974	55	18	55	33	55	0	0	0	0
	point345	345	974	55	18	55	33	55	0	0	0	0
	point344	344	974	55	18	55	33	55	0	0	0	0
	point343	343	974	55	18	55	33	55	0	0	0	0
	point342	342	974	55	18	55	33	55	0	0	0	0
	point341	341	974	55	18	55	33	55	0	0	0	0
	point340	340	974	55	18	55	33	55	0	0	0	0
	point339	339	974	55	18	55	33	55	0	0	0	0
	point338	338										
Rancho Vista WB | Sierra-3rd	point370	370	1296	55	23	55	41	55	0	0	0	0
	point369	369	1296	55	23	55	41	55	0	0	0	0
	point368	368	1296	55	23	55	41	55	0	0	0	0
	point367	367	1296	55	23	55	41	55	0	0	0	0
	point366	366	1296	55	23	55	41	55	0	0	0	0

	point365	365										
Rancho Vista WB | 3rd-Division	point372	372	1377	55	24	55	43	55	0	0	0	0
	point364	364	1377	55	24	55	43	55	0	0	0	0
	point363	363	1377	55	24	55	43	55	0	0	0	0
	point362	362	1377	55	24	55	43	55	0	0	0	0
	point361	361	1377	55	24	55	43	55	0	0	0	0
	point360	360	1377	55	24	55	43	55	0	0	0	0
	point359	359	1377	55	24	55	43	55	0	0	0	0
	point358	358	1377	55	24	55	43	55	0	0	0	0
	point357	357	1377	55	24	55	43	55	0	0	0	0
	point356	356	1377	55	24	55	43	55	0	0	0	0
	point355	355	1377	55	24	55	43	55	0	0	0	0
	point354	354	1377	55	24	55	43	55	0	0	0	0
	point353	353	1377	55	24	55	43	55	0	0	0	0
	point371	371	1377	55	24	55	43	55	0	0	0	0
	point352	352										
Rancho Vista EB | 3rd-Sierra	point373	373	990	55	18	55	34	55	0	0	0	0
	point337	337	990	55	18	55	34	55	0	0	0	0
	point336	336	990	55	18	55	34	55	0	0	0	0
	point335	335	990	55	18	55	34	55	0	0	0	0
	point334	334	990	55	18	55	34	55	0	0	0	0
	point333	333	990	55	18	55	34	55	0	0	0	0
	point332	332										

Appendix D

Project Stationary Operations Noise Prediction Data

AHUs (plenum-

Building Minimum Ventilation (no cold room)

percent GSF reserved for "cold room": 25

													A-weighted PWL (for CadnaA inputs)								
Tag	Building	GSF	Avail. SF	Height (ft)	Avg. minutes to change air*	Volume (ft3)	CFM	m^2	comparable facility function	Pressure (iwg)	Pressure (Pa)	Q (m^3/s)	fantype = plug, tube, or prop	63	125	250	500	1000	2000	4000	8000	OA dB
return air fans in building rooftop AHUs:																						
WAHU	Warehouse	1000000	675000	50	6	33750000	5625000	62742	warehouse	2	500	2654	plug	82	94	95	96	93	86	80	75	**101**
OAHU	Office	75000	75000	15	3	1125000	375000	6971	office	2	500	177	plug	70	82	83	84	81	74	68	63	**89**

A-weighting adjustments		26	13	9	3	0	-1	-1	1
average of values for the two fan diameter ranges, per Guyer (Table 12)	plug	40	40	38	34	29	23	19	16
average of values for the two fan diameter ranges, per Guyer (Table 12)	tube	47	44	46	47	44	45	38	35
per Guyer (Table 12, presumed based on Bies & Hansen ENC)	prop	46	48	55	53	52	48	43	38
fan or AHU cabinet liner/interior attenuation (excludes inlet/outlet PWL split, already in calcs above:		2	3	4	5	6	8	10	10

* per Loren Cook's "Engineering Cookbook", 1999 edition, p. 41

ACCs (air-cooled chillers on rooftops):

Building Interior Comfort (non-office)

with or without sound insulation? (enter Y/N): Y

	tons	LWA	**unweighted** PWL (dB) per OCBF (Hz) at full load (100%)							
			63	125	250	500	1000	2000	4000	8000
Bryant BH16-018 (no sound blanket)	1.5	67	66.2	66.2	63.9	63.8	62.3	58.4	56.4	50.3
Bryant BH16-024 (no sound blanket)	2	71	65	65	63.7	63.4	68.5	64.7	58.7	52.8
Bryant BH16-036 (no sound blanket)	3	71	68.2	68.2	66.4	67.5	68.4	59.6	58.2	52.4
Bryant BH16-048 (no sound blanket)	4	71	68.4	68.4	67.7	69.7	67.6	59.4	56.4	50
Bryant BH16-060 (no sound blanket)	5	69	63.7	63.7	65.4	67.3	64.9	58.3	56.2	51.9
Daikin AGZ-E 30 (w/out sound insulation)	30	85	84	84	83	84	77	75	74	70
Daikin AGZ-E 40 (w/out sound insulation)	40	85	84	84	83	84	77	75	74	70
Daikin AGZ-E 50 (w/out sound insulation)	50	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 60 (w/out sound insulation)	60	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 70 (w/out sound insulation)	70	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 80 (w/out sound insulation)	80	88	88	85	87	86	81	81	77	71
Daikin AGZ-E 90 (w/out sound insulation)	90	88	88	87	87	86	83	80	77	71
Daikin AGZ-E 120 (w/out sound insulation)	120	89	91	85	88	86	82	81	79	72
Daikin AGZ-E 240 (w/out sound insulation)	241	94	94	88	91	90	91	84	82	75

percent of GSF reserved for "cold room":	25
percent of remaining GSF reserved for "office space":	10
actual percent of GSF occupied:	95

Phase	Building Tag	GSF	Avail. SF	comparable facility function	Avg. GSF per ton*	tons of refrig.	Approx. Qty. of ACCs	tons per ACC	Approx. Total PWL (dBA)	**unweighted** PWL (dB) per OCBF (Hz) at full load (100%)							
										63	125	250	500	1000	2000	4000	8000
1	Warehouse	1000000	641250	factory	240	2671.9	22	121	**102**	104	98	101	99	95	94	92	85
									A-weighting adjustments	26	13	9	3	0	-1	-1	1
									102	78	85	92	96	95	95	93	84

*based upon "Io" value per Loren Cook's "Engineering Cookbook", 1999 edition, pp. 59-60

ACCs (air-cooled chillers on rooftops):

Building Office Interior Comfort

with or without sound insulation? (enter Y/N): Y

	tons	LWA	unweighted PWL (dB) per OCBF (Hz) at full load (100%)							
			63	125	250	500	1000	2000	4000	8000
Bryant BH16-018 (no sound blanket)	1.5	67	66.2	66.2	63.9	63.8	62.3	58.4	56.4	50.3
Bryant BH16-024 (no sound blanket)	2	71	65	65	63.7	63.4	68.5	64.7	58.7	52.8
Bryant BH16-036 (no sound blanket)	3	71	68.2	68.2	66.4	67.5	68.4	59.6	58.2	52.4
Bryant BH16-048 (no sound blanket)	4	71	68.4	68.4	67.7	69.7	67.6	59.4	56.4	50
Bryant BH16-060 (no sound blanket)	5	69	63.7	63.7	65.4	67.3	64.9	58.3	56.2	51.9
Daikin AGZ-E 30 (w/out sound insulation)	30	85	84	84	83	84	77	75	74	70
Daikin AGZ-E 40 (w/out sound insulation)	40	85	84	84	83	84	77	75	74	70
Daikin AGZ-E 50 (w/out sound insulation)	50	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 60 (w/out sound insulation)	60	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 70 (w/out sound insulation)	70	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 80 (w/out sound insulation)	80	88	88	85	87	86	81	81	77	71
Daikin AGZ-E 90 (w/out sound insulation)	90	88	88	87	87	86	83	80	77	71
Daikin AGZ-E 120 (w/out sound insulation)	120	89	91	85	88	86	82	81	79	72
Daikin AGZ-E 240 (w/out sound insulation)	241	94	94	88	91	90	91	84	82	75

percent of GSF reserved for "cold room": 25

percent of remaining GSF reserved for "office space": 10

Phase	Building Tag	GSF	Avail. SF	comparable facility function	Avg. GSF per ton*	tons of refrig.	Approx. Qty. of ACCs	tons per ACC	Approx. Total PWL (dBA)	unweighted PWL (dB) per OCBF (Hz) at full load (100%)							
										63	125	250	500	1000	2000	4000	8000
1	Office	1000000	75000	Office	360	208.3	7	30	**77**	72	72	74	76	73	67	65	60
									A-weighting adjustments	26	13	9	3	0	-1	-1	1
							4	5									
									75	46	59	65	73	73	68	66	59

*based upon "Io" value per Loren Cook's "Engineering Cookbook", 1999 edition, pp. 59-60

ACCs (air-cooled chillers on rooftops):

Cold Room Refrigeration

with or without sound insulation? (enter Y/N): Y

	tons	LWA	**unweighted** PWL (dB) per OCBF (Hz) at full load (100%)							
			63	125	250	500	1000	2000	4000	8000
Bryant BH16-018 (no sound blanket)	1.5	67	66.2	66.2	63.9	63.8	62.3	58.4	56.4	50.3
Bryant BH16-024 (no sound blanket)	2	71	65	65	63.7	63.4	68.5	64.7	58.7	52.8
Bryant BH16-036 (no sound blanket)	3	71	68.2	68.2	66.4	67.5	68.4	59.6	58.2	52.4
Bryant BH16-048 (no sound blanket)	4	71	68.4	68.4	67.7	69.7	67.6	59.4	56.4	50
Bryant BH16-060 (no sound blanket)	5	69	63.7	63.7	65.4	67.3	64.9	58.3	56.2	51.9
Daikin AGZ-E 30 (w/out sound insulation)	30	85	84	84	83	84	77	75	74	70
Daikin AGZ-E 40 (w/out sound insulation)	40	85	84	84	83	84	77	75	74	70
Daikin AGZ-E 50 (w/out sound insulation)	50	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 60 (w/out sound insulation)	60	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 70 (w/out sound insulation)	70	87	85	85	85	86	80	77	75	70
Daikin AGZ-E 80 (w/out sound insulation)	80	88	88	85	87	86	81	81	77	71
Daikin AGZ-E 90 (w/out sound insulation)	90	88	88	87	87	86	83	80	77	71
Daikin AGZ-E 120 (w/out sound insulation)	120	89	91	85	88	86	82	81	79	72
Daikin AGZ-E 240 (w/out sound insulation)	241	94	94	88	91	90	91	84	82	75

percent GSF reserved for "cold room": 25

Phase	Building Tag	GSF	Avail. SF	Avail. m^2	height (m)	floor, walls, and roof area (m^2)	temp. In (c)	temp. Out (c)	U ($W/m^2.K$)	% of cooling load = transmission (5-15)*	Total Load (kWh)	ton-hours of refrig.	Approx. Qty. of ACCs	tons per ACC	Approx. Total PWL (dBA)	**unweighted** PWL (dB) per OCBF (Hz) at full load (100%)							
																63	125	250	500	1000	2000	4000	8000
1	Cold Storage	1000000	250000	23237.7	15.2	55770.4	1.0	40.0	0.28	10	6090.1	1731.7	25	70	**101**	99	99	99	100	94	91	89	84
															A-weighting adjustments	26	13	9	3	0	-1	-1	1
													25	70	**101**	73	86	90	97	94	92	90	83

*https://theengineeringmindset.com/cooling-load-calculation-cold-room/

from CMS "Midpoint at 237" March 27, 2014 noise study

	dBA	dist (feet)	at 50'	Dudek time estimate minutes per hour	hourly Leq	source	PWL
truck passby	68	30	63.6	2	48.8	**traveling on lot**	**83.5**
truck airbrakes	72	25	66.0	0.05	35.2	at dock	69.8
truck backup alarm	79	30	74.6	0.05	43.8	at dock	78.4
idle before shutoff	70	25	64.0	1	46.2	at dock	80.9
truck engine ignition + airbrakes	71	25	65.0	0.05	34.2	at dock	68.8
truck accelerating from stop	74	25	68.0	0.05	37.2	at dock	71.8
						total at dock	**83.5**

dock door quantities from 2/16/22 siteplan		peak hour trips*	split**	log add***
Building 1	docks	29		
	74		NA	14.6

*(3 and 4-axle trucks)

**(based on dock ratio for the building)

***(to single truck noise levels)

Appendix E
High-Speed Rail Noise Model Worksheets

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Enter Receiver Data Below

Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 1
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	59.0
	Distance to Near Track Centerline (ft)	2510
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	0

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

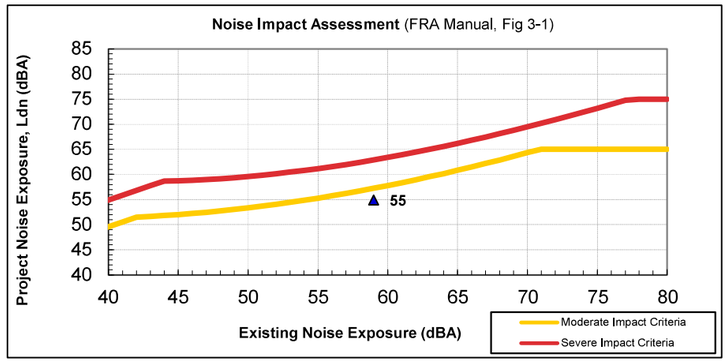
Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**57.2**
Ldn	Severe Impact Criterion (dBA)	**62.9**
Ldn	Ldn at 2,510 ft (w/ no intervening building rows),dBA	**54.9**
	Results below include 0 intervening building rows	
Ldn	Ldn at 2,510 ft, dBA	**54.9**
Leq	Daytime Leq at 2,510 ft, dBA	**53.6**
Leq	Nighttime Leq at 2,510 ft, dBA	**46.4**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**60.4**
	Future Increase in Noise Level (dB)	**1.4**
	Potential Impact ?	**No**



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Enter Receiver Data Below

Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 1
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	59.0
	Distance to Near Track Centerline (ft)	2510
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	0

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

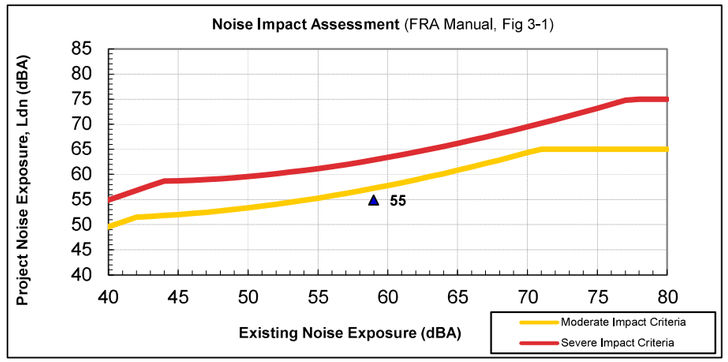
Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**57.2**
Ldn	Severe Impact Criterion (dBA)	**62.9**
Ldn	Ldn at 2,510 ft (w/ no intervening building rows),dBA	**54.9**
	Results below include 0 intervening building rows	
Ldn	Ldn at 2,510 ft, dBA	**54.9**
Leq	Daytime Leq at 2,510 ft, dBA	**53.6**
Leq	Nighttime Leq at 2,510 ft, dBA	**46.4**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**60.4**
	Future Increase in Noise Level (dB)	**1.4**
	Potential Impact ?	**No**



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Enter Receiver Data Below

Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 2
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	61.0
	Distance to Near Track Centerline (ft)	2550
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	0

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

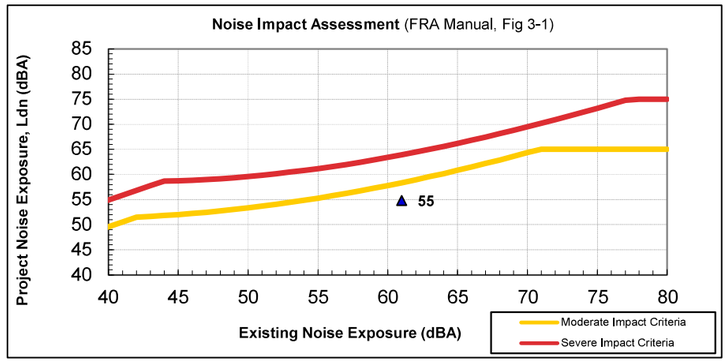
Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**58.4**
Ldn	Severe Impact Criterion (dBA)	**63.9**
Ldn	Ldn at 2,550 ft (w/ no intervening building rows),dBA	**54.8**
	Results below include 0 intervening building rows	
Ldn	Ldn at 2,550 ft, dBA	**54.8**
Leq	Daytime Leq at 2,550 ft, dBA	**53.5**
Leq	Nighttime Leq at 2,550 ft, dBA	**46.3**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**61.9**
	Future Increase in Noise Level (dB)	**0.9**
	Potential Impact ?	**No**



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Enter Receiver Data Below

Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 2
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	61.0
	Distance to Near Track Centerline (ft)	2550
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	0

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

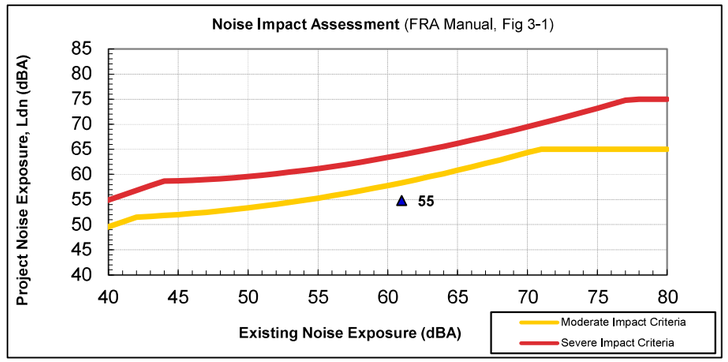
Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**58.4**
Ldn	Severe Impact Criterion (dBA)	**63.9**
Ldn	Ldn at 2,550 ft (w/ no intervening building rows),dBA	**54.8**
	Results below include 0 intervening building rows	
Ldn	Ldn at 2,550 ft, dBA	**54.8**
Leq	Daytime Leq at 2,550 ft, dBA	**53.5**
Leq	Nighttime Leq at 2,550 ft, dBA	**46.3**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**61.9**
	Future Increase in Noise Level (dB)	**0.9**
	Potential Impact ?	**No**



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Enter Receiver Data Below

Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 3
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	64.0
	Distance to Near Track Centerline (ft)	2320
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	2

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

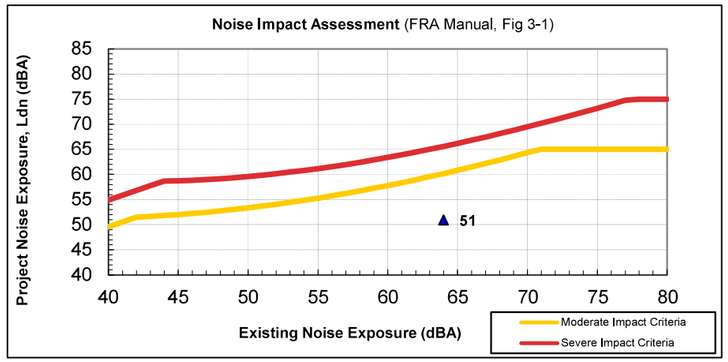
Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**60.2**
Ldn	Severe Impact Criterion (dBA)	**65.6**
Ldn	Ldn at 2,320 ft (w/ no intervening building rows),dBA	**55.4**
	Results below include 2 intervening building rows	
Ldn	Ldn at 2,320 ft, dBA	**50.9**
Leq	Daytime Leq at 2,320 ft, dBA	**49.6**
Leq	Nighttime Leq at 2,320 ft, dBA	**42.4**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**64.2**
	Future Increase in Noise Level (dB)	**0.2**
	Potential Impact ?	**No**



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Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 3
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	63.0
	Distance to Near Track Centerline (ft)	2320
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	2

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

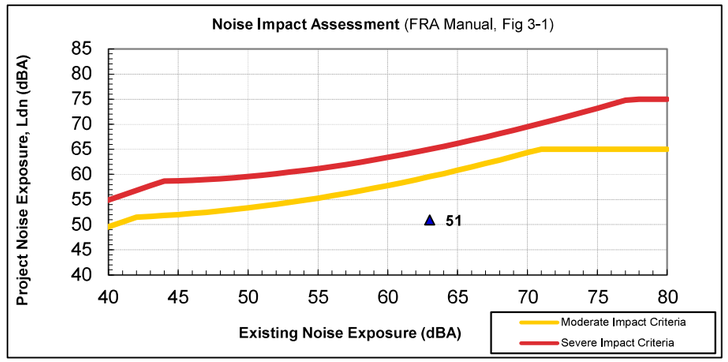
Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**59.6**
Ldn	Severe Impact Criterion (dBA)	**65.0**
Ldn	Ldn at 2,320 ft (w/ no intervening building rows),dBA	**55.4**
	Results below include 2 intervening building rows	
Ldn	Ldn at 2,320 ft, dBA	**50.9**
Leq	Daytime Leq at 2,320 ft, dBA	**49.6**
Leq	Nighttime Leq at 2,320 ft, dBA	**42.4**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**63.3**
	Future Increase in Noise Level (dB)	**0.3**
	Potential Impact ?	**No**



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Enter Receiver Data Below

Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 4
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	64.0
	Distance to Near Track Centerline (ft)	1400
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	2

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

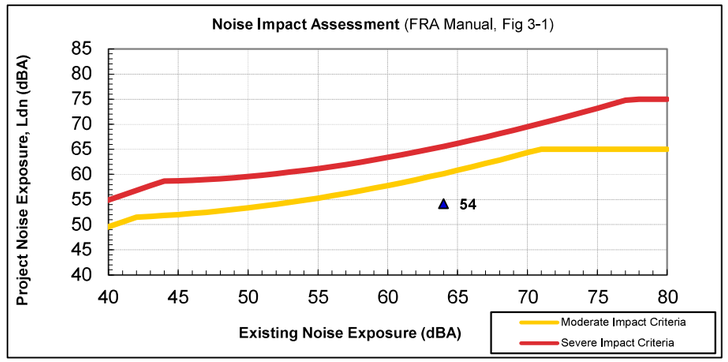
Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**60.2**
Ldn	Severe Impact Criterion (dBA)	**65.6**
Ldn	Ldn at 1,400 ft (w/ no intervening building rows),dBA	**58.7**
	Results below include 2 intervening building rows	
Ldn	Ldn at 1,400 ft, dBA	**54.2**
Leq	Daytime Leq at 1,400 ft, dBA	**52.9**
Leq	Nighttime Leq at 1,400 ft, dBA	**45.7**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**64.4**
	Future Increase in Noise Level (dB)	**0.4**
	Potential Impact ?	**No**



Federal Railroad Administration
High-Speed Rail Initial Noise Evaluation version 2.0, January 2012
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Enter Receiver Data Below

Model Input Errors/Warnings

	RECEIVER DATA	
	Receiver	Receiver 4
(See Table 3-2 below) -->	Land Use Category (1-3) --> Residences	2
	Existing Noise Exposure (Ldn, dBA)	60.0
	Distance to Near Track Centerline (ft)	1400
	Track Separation (ft)	16.5
(Maximum of 6) -->	# of Intervening Building Rows	2

Enter Train Data Below

	TRAIN & OPERATIONAL DATA	
(See Table 4-3 below) -->	Train Type (1-3) --> Electric	1
	Speed (mph)	190
	Length of each Powered Car (ft)	82.5
	Length of each Non-Powered Car (ft)	82.5
	# of Powered Cars in Train Consist	8
	# of Non-Powered Cars in Train Consist	8
(See Table 4-4 below) -->	Track Geometry (0-5) --> At-grade	0
	Enter Train Volumes for One Direction of Travel	
	Total # of Daytime (7 A.M. to 10 P.M.) Trains	185
	Total # of Nighttime (10 P.M. to 7 A.M.)Trains	21

Land Use Categories (from Table 3-2)		
1	Outdoor Quiet	Leq
2	Residences	Ldn
3	Institutional	Leq

Train Types (from Table 4-3)	
1	Electric - Electric Locomotive and EMU Trains (up to 220 mph)
2	Fossil Fuel* - Gas-Turbine Locomotive Trains (up to 150 mph)
3	Maglev (up to 250 mph)

Track Geometry (from Table 4-4)	
0	Tracks at Grade
1	Tracks in Shallow Cut
2	Tracks in Deep Trench/Cut
3	Tracks on Aerial Structure
4	Tracks on Embankment
5	Noise Barrier

Model Result Warnings

MODEL RESULTS		
Metric	**Description**	**Level**
Ldn	Moderate Impact Criterion (dBA)	**57.8**
Ldn	Severe Impact Criterion (dBA)	**63.4**
Ldn	Ldn at 1,400 ft (w/ no intervening building rows),dBA	**58.7**
	Results below include 2 intervening building rows	
Ldn	Ldn at 1,400 ft, dBA	**54.2**
Leq	Daytime Leq at 1,400 ft, dBA	**52.9**
Leq	Nighttime Leq at 1,400 ft, dBA	**45.7**
Leq	Future Noise Level (Existing and Project Sources), (dBA)	**61.0**
	Future Increase in Noise Level (dB)	**1.0**
	Potential Impact ?	**No**

