Appendix E
Noise

General Plan Update
Noise Impact Study
City of Laguna Niguel, CA

Prepared for:

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

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

The following is provided in this report:

- A description of the Project Area and the proposed Project
- Information regarding the fundamentals of noise and vibration
- A description of the local noise and vibration guidelines and standards
- An analysis of traffic noise impacts to and from the project site
- An analysis of stationary noise impacts to and from the project site
- An analysis of construction noise impacts
- An analysis of ground-borne vibration impacts to and from the project site
- Suggested mitigation measures to reduce impacts

1.2 Site Location and Project Area

Laguna Niguel is located in the San Joaquin Hills in the southeastern corner of Orange County (see Exhibit A for the Regional Location Map). The City is approximately 14.7 square miles in land area and surrounded by several local jurisdictions including the City of Dana Point to the south; the City of San Juan Capistrano to the east; the County of Orange (Aliso and Woods Canyon Regional Park) and the City of Laguna Beach to the west; and the cities of Aliso Viejo, Laguna Hills, and Mission Viejo to the north. Interstate 5 and State Route 73 provide regional access to Laguna Niguel.

The General Plan Update Study Area, as shown in Exhibit B, includes the entire City limits (approximately 9,464 acres) and does not have any Sphere of Influence areas beyond its corporate boundaries. Additionally, the proposed Land Use Element continues to separate Laguna Niguel into 14 Community Profile Areas and Sub-Profile Areas, as shown in Exhibits C and D, to facilitate a manageable approach to community planning and land use implementation.

1.3 Proposed Project Description

The City of Laguna Niguel is preparing a comprehensive update to its existing General Plan that was adopted in 1992. The updated Laguna Niguel General Plan is expected to be adopted in 2025 and will guide the City's development and conservation through land use objectives and policy guidance. The General Plan is intended to be an expression of the community's vision for the City and constitutes the policy and regulatory framework by which future development projects will be reviewed and public improvements will be implemented. The Guiding Principles for the General Plan Update include:

- Thriving Community
- Strong and Resilient Economy
- Environmental Stewardship
- Connecting People and Places
- Innovation for a Better Future

The General Plan Update includes a comprehensive set of goals and policies, organized into seven new elements (plus the Housing Element), including a revised Land Use Map. Exhibit E provides the existing land use map, and Exhibit F provides the proposed Land Use Map. The goals and policies provide guidance to the City on how to direct change and manage growth, infrastructure, and natural resources over a 20-year planning horizon. The General Plan Update also addresses additional elements related to the physical development of the City. The degree of specificity and level of detail of the discussion of each General Plan element need only reflect local conditions and circumstances.

The General Plan Update also identifies three Opportunity Areas, each serving a distinct role that complements the broader community vision. These Opportunity Areas are targeted for considerable growth through the establishment of area-specific overlays. These "Opportunity Area Overlays," which may be applied through separate legislative action, provide a pathway for potential redevelopment flexibility in exceedance of the maximum growth permitted by each base land use designation. The Opportunity Area Overlays are shown in Exhibit F.

This report will aid in the development of the Noise Element of the General Plan Update. As required by State law, the Noise Element identifies and assesses noise levels from major sources to inform land use planning and reduce residents' exposure to excessive noise.

1.4 General Plan Update Buildout Assumptions

Buildout of the General Plan could yield a total of up to 31,124 housing units, a population of 76,151 people, approximately 7.26 million square feet of non-residential building square footage, and 19,267 jobs within the Planning Area. As shown in Table 1, this represents development growth over existing conditions of up to approximately 3,464 new housing units, 8,418 people, 1,099,496 square feet of new non-residential building square footage, and 5,467 jobs.

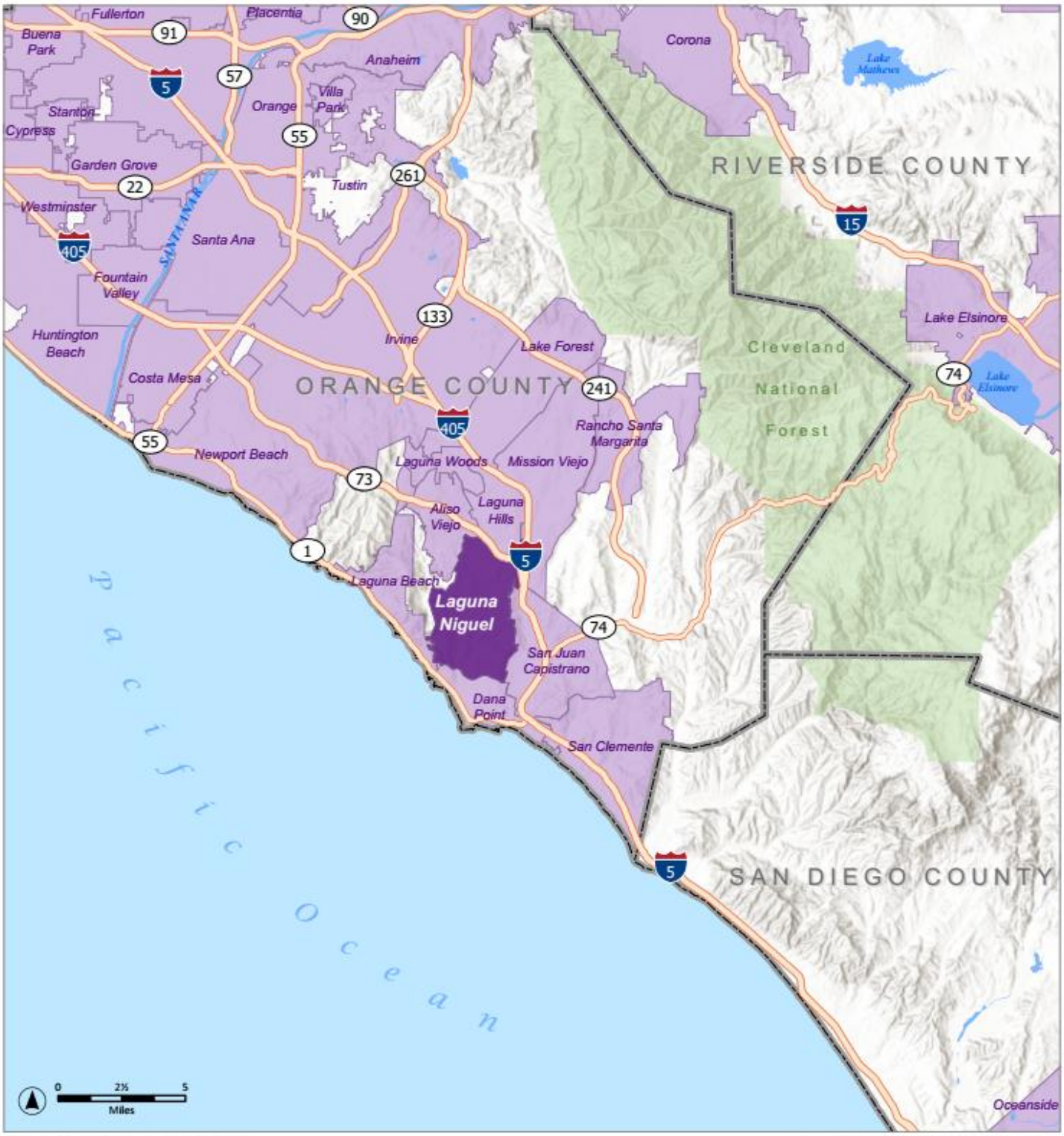
The analysis of the General Plan Update is based on various assumptions regarding existing and future conditions in Laguna Niguel. Unless otherwise stated, the assumptions are as specified in Table 1, which are based on the General Plan 2045 Buildout.

Table 1: General Plan Update Growth Assumptions

	Existing Conditions	Total Growth Potential			Net Change (Proposed Community Profile Areas and Opportunity Areas compared to Existing Conditions)
		Proposed Community Profile Areas	Proposed Opportunity Areas	Proposed Community Profile Areas and Opportunity Areas	
Residential Units	27,660	29,624	1,500	31,124	3,464
Managed Care Facility Units	520	520	0	520	0
Population	67,734	72,506	3,645	76,151	8,418
Commercial Square Footage	5,762,761	6,804,895	2,012,321	6,862,257	1,099,496
Public Institutional Square Footage	401,658	401,658	0	401,658	0
Hotel Rooms	33	470	120	590	557
Jobs	13,800[1]	19,036[2]	5,336[3]	19,267	5,467

Exhibit A

Regional Location Map



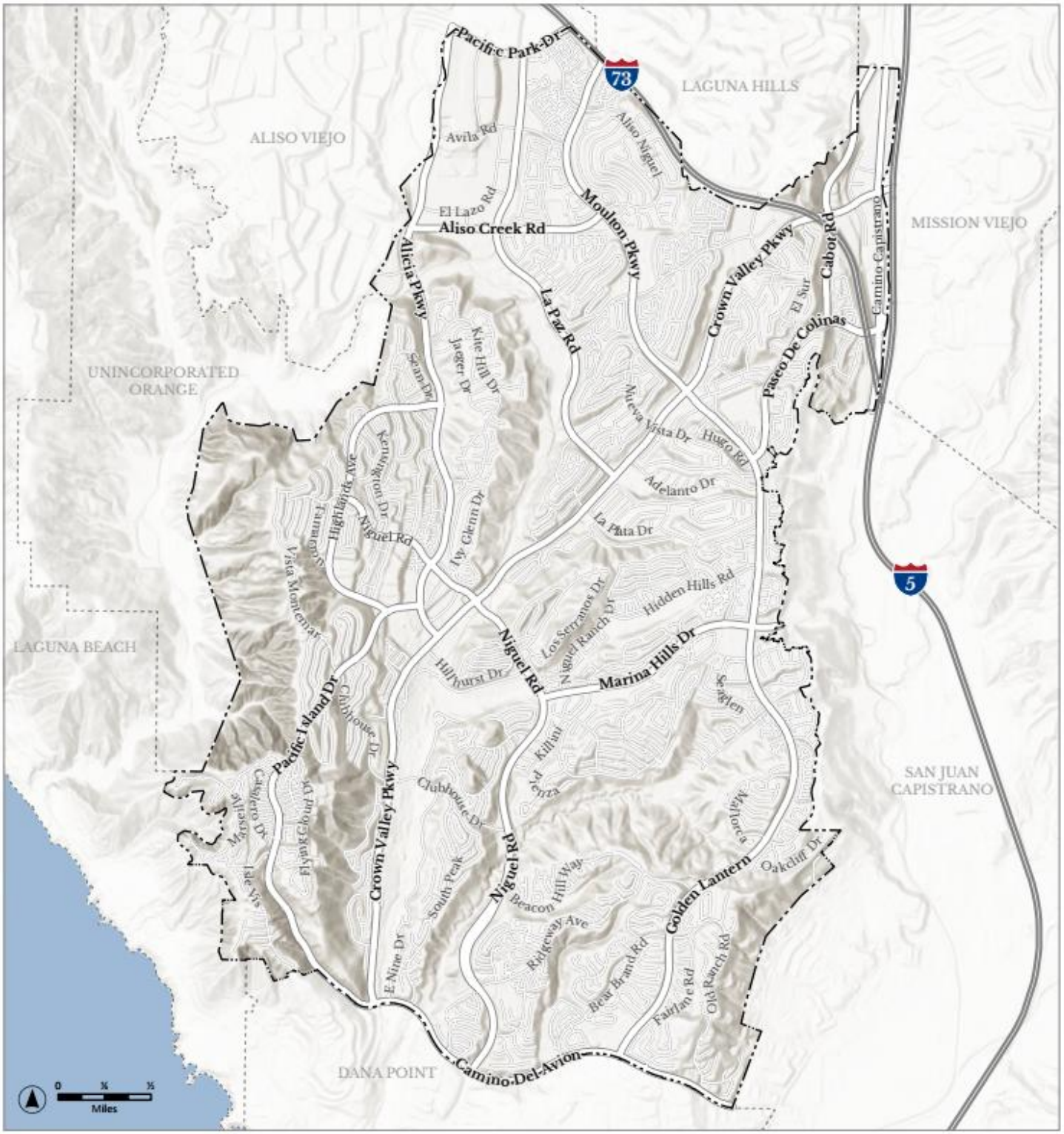
Data sources: California State Geoportal; USGS Transportation.

Prepared for the City of Laguna Niguel by De Novo Planning Group
March 18, 2015

LEGEND

- City of Laguna Niguel
- Other Incorporated Areas
- County Boundary
- National Forest

Exhibit B
Plan Area



Data sources: City of Laguna Niguel; Orange County GIS.

Prepared for the City of Laguna Niguel by De Novo Planning Group
March 13, 2025.

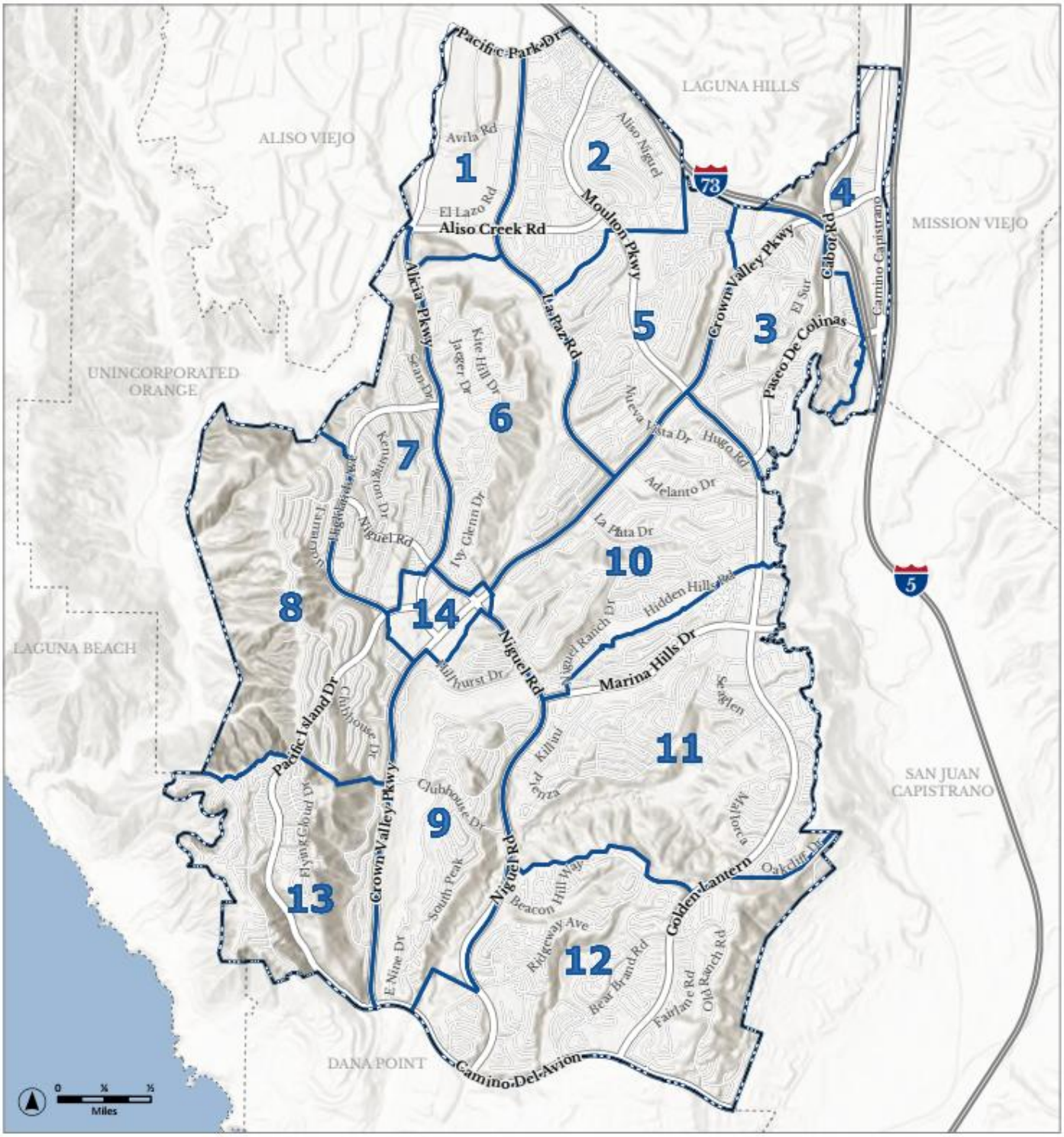
LEGEND

Laguna Niguel City Boundary

Other Jurisdictions

Exhibit C

General Plan Update Community Profile Areas



Data sources: City of Laguna Niguel; Orange County GIS.

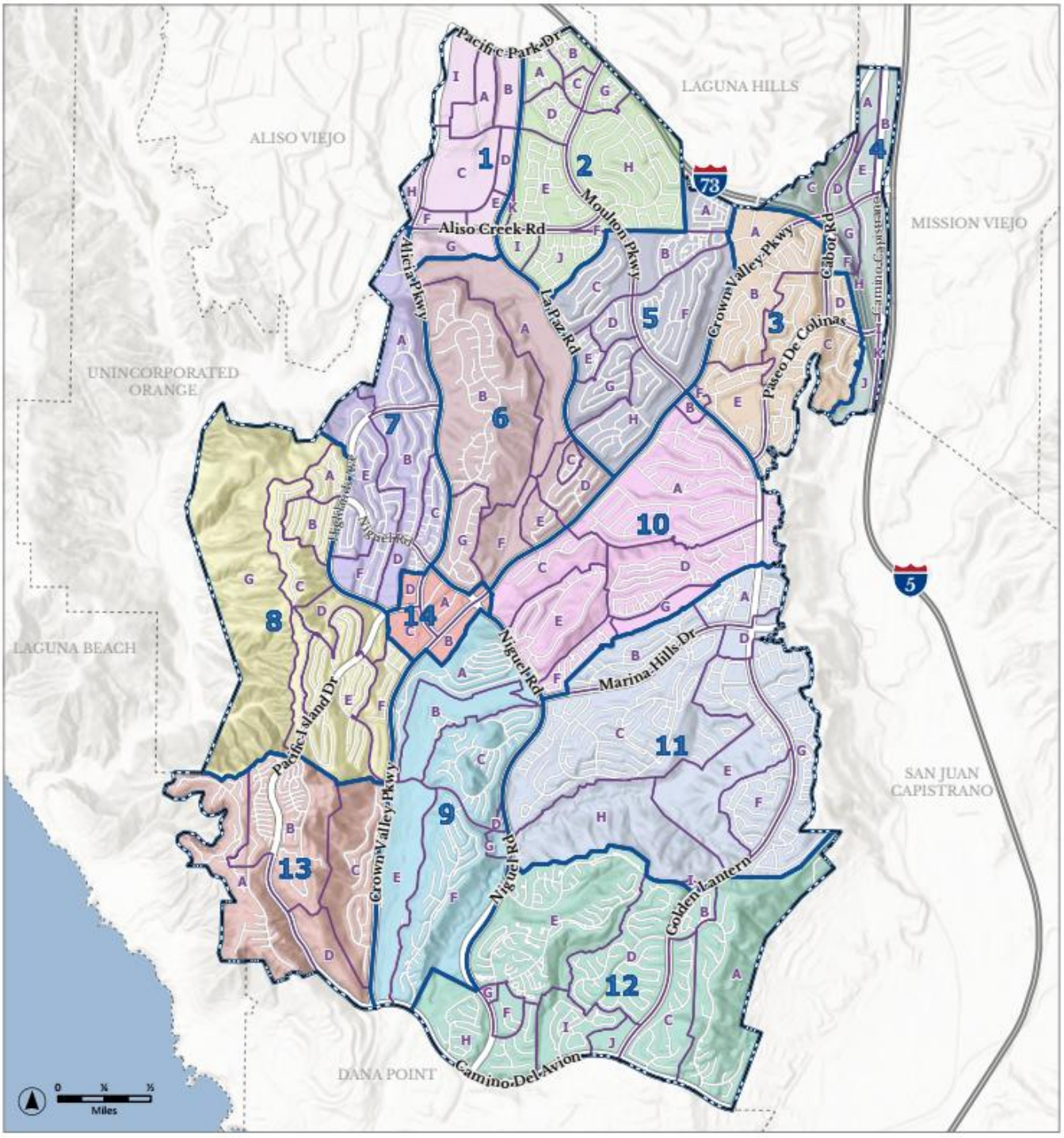
Prepared for the City of Laguna Niguel by De Novo Planning Group
August 11, 2025.

LEGEND

- Laguna Niguel City Boundary
- Other Jurisdictions
- Community Profile Areas

Exhibit D

General Plan Update Community Profile and Sub-Profile Areas



Data sources: City of Laguna Niguel; Orange County GIS.

Prepared for the City of Laguna Niguel by De Nova Planning Group
April 15, 2025.

LEGEND

- Laguna Niguel City Boundary
- Other Jurisdictions

Community Profile Areas

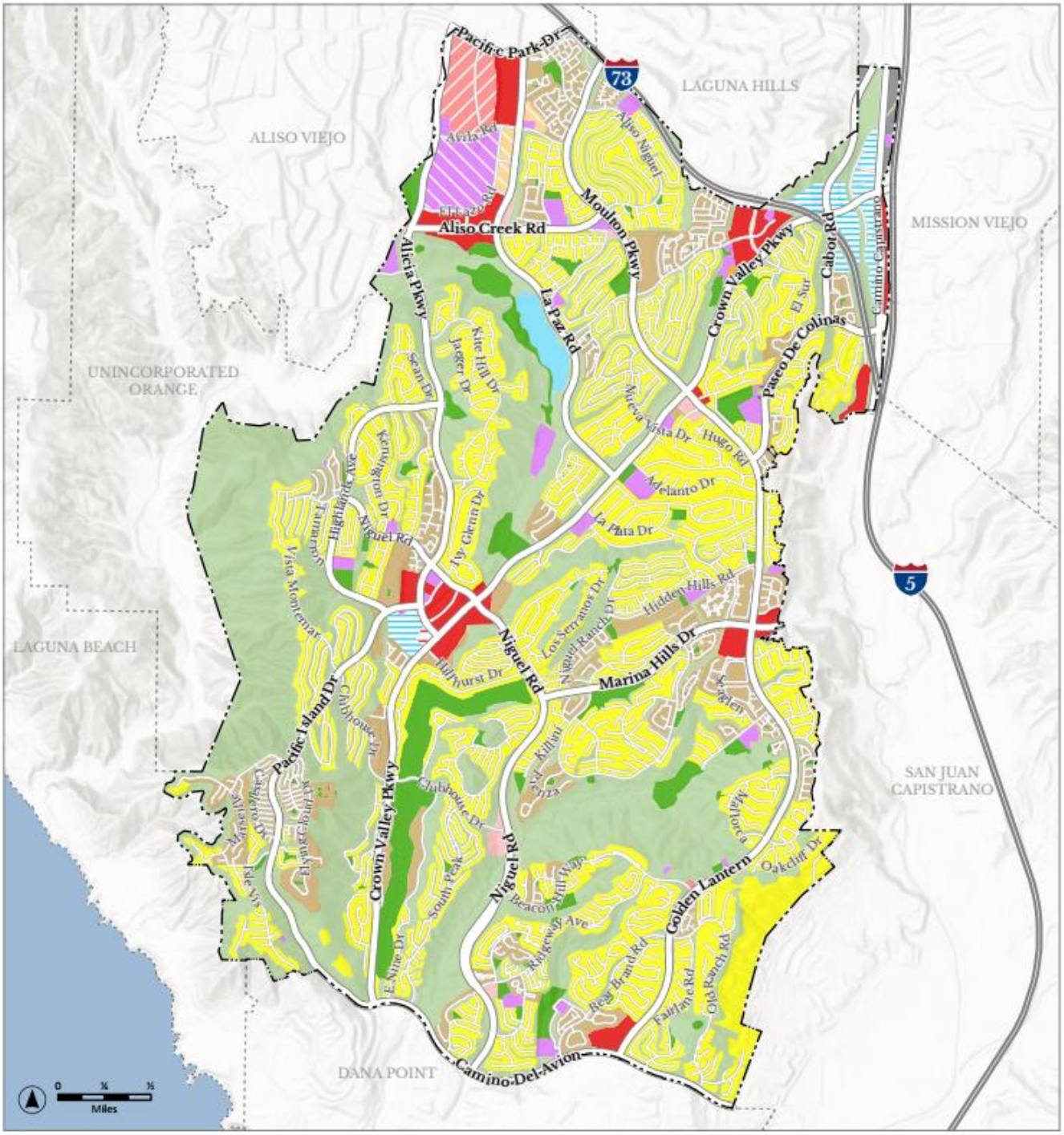
1	5	9	13
2	6	10	14
3	7	11	
4	8	12	

Community Sub-Profile Areas

- A Community Sub-Profile Areas

Exhibit E

Existing General Plan Land Use Map



Data sources: City of Laguna Niguel Official General Plan Map, 9-11-2023; Orange County GIS.

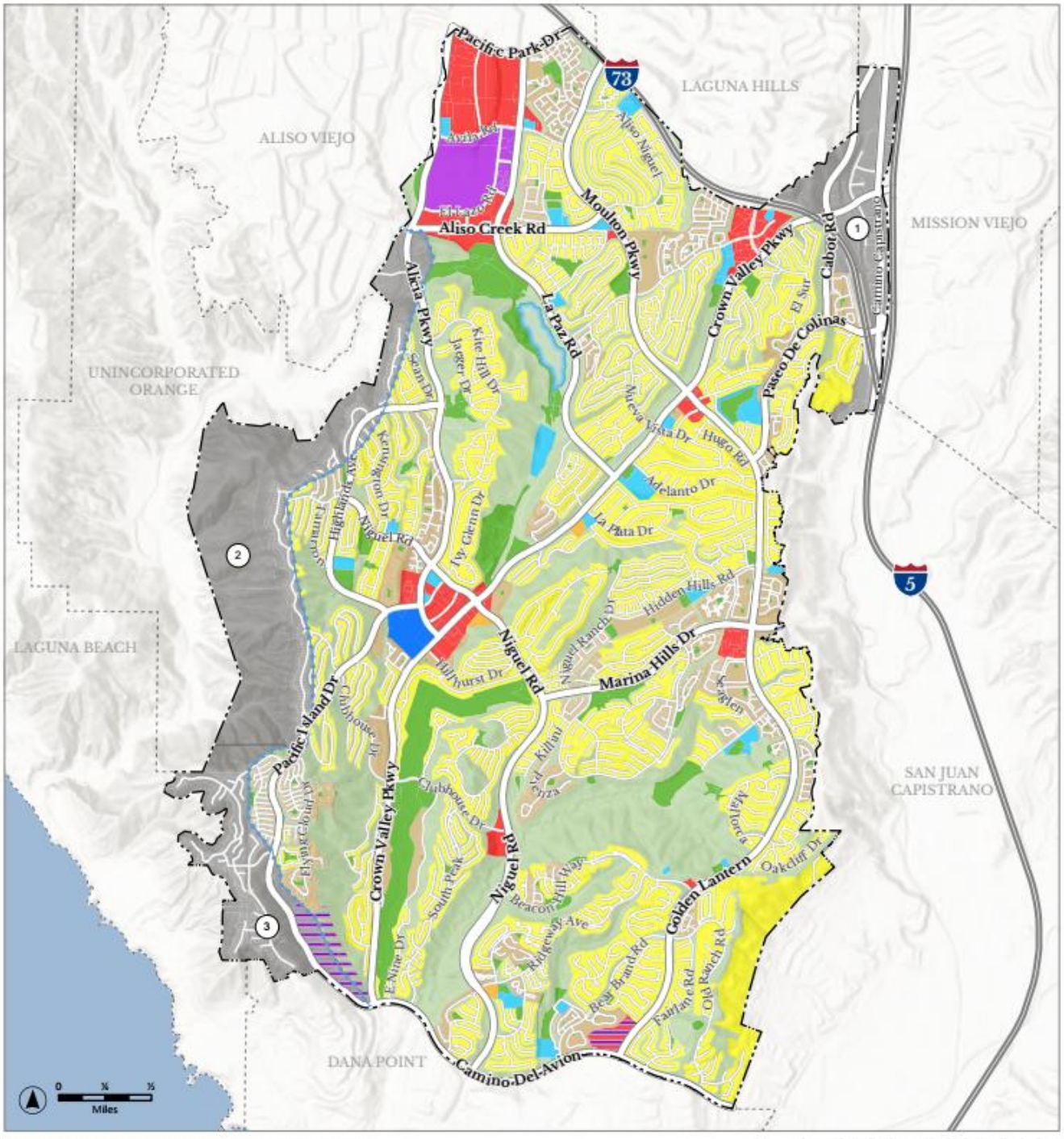
Prepared for the City of Laguna Niguel by De Nova Planning Group March 12, 2025.

LEGEND

- Laguna Niguel City Boundary
- RD: Residential Detached
- RA: Residential Attached
- CN: Neighborhood Commercial
- CC: Community Commercial
- PO: Professional Office
- PI: Public/Institutional
- PR: Parks and Recreation
- OS: Open Space
- I/BP/PO/CC: Industrial/Business Park; Professional Office; Community Commercial
- CC/PO: Community Commercial; Professional Office
- CC/PO/PI: Community Commercial; Professional Office; Public/Institutional
- PI/PO: Public/Institutional; Professional Office
- PO/I/BP: Professional Office; Industrial/Business Park
- CC/PO/PI/RA: Community Commercial; Professional Office; Public/Institutional; Residential Attached
- PI/RA/PR: Public/Institutional; Residential Attached; Parks and Recreation
- Water

Exhibit F

Proposed General Plan Land Use Map



Data sources: City of Laguna Niguel Official General Plan Map, 9-11-2023; Orange County GIS.

Prepared for the City of Laguna Niguel by De Novo Planning Group. August 11, 2025.

LEGEND

- Laguna Niguel City Boundary
- Laguna Niguel Lake
- Coastal Zone Boundary

General Plan Land Use

- RD: Residential Detached
- RA: Residential Attached
- GC: General Commercial
- BP: Business Park
- MCF: Managed Care Facility
- PR: Parks and Recreation
- OS: Open Space
- PI: Public Institutional
- CC: Civic Center
- SP: Specific Plan

1. Laguna Niguel Gateway Specific Plan
2. Aliso Creek Specific Plan/Local Coastal Program
3. South Laguna Specific Plan/Local Coastal Program

Overlays

- Opportunity Area Overlay 1
- Opportunity Area Overlay 2
- Opportunity Area Overlay 3
- Hospitality Overlay

2.0 Fundamentals of Noise

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

2.1 Sound, Noise, and Acoustics

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

2.2 Frequency and Hertz

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

2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square meter ($\mu N/m^2$), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds of equal SPL are combined, they will produce an SPL 3 dB greater than the single SPL. In other words, sound energy that is doubled produces a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound. When combining sound levels, estimates shown in Table 2 may be utilized.

Table 2: Decibel Addition

When Two Decibel Values Differ by:	Add This Amount to Higher Value	Example
0 or 1 dB	3 dB	70+69=73 dB
2 or 3 dB	2 dB	74+71=76 dB
4 to 9 dB	1 dB	66+60=67 dB
10 dB or more	0 dB	65+55=65 dB
Source: Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol. Caltrans, 2013		

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, A-scale weighting is typically used and is reported in terms of the A-weighted decibel (dBA). The A-scale was designed to account for the frequency-dependent sensitivity of the human ear. Typical A-weighted noise levels are shown in Table 3.

Table 3: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor
	110	Rock Band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large Business Office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcasting/recording studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol. Caltrans, 2013.

In general, the human ear can barely perceive a change in the noise level of 3 dB. As shown in Table 4, a change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Table 4: Perceived Changes in Noise Levels

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud
Source: Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol. Caltrans, 2013.	

2.6 Noise Descriptors

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

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

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

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

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

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

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

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

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

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

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

Percent Noise Levels: See L(n).

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

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

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

2.7 Tonal Sounds

A pure tone sound is a sound produced at or near a single frequency. Laboratory tests have shown that humans are more perceptible to changes in sound levels of a pure tone. For a noise source to contain a "pure tone," there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to "stand out" against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contagious one-third octave bands by 5 dB for center frequencies of 500 Hertz (Hz) and above; by 8 dB for center frequencies between 160 and 400 Hz; and by 15 dB for center frequencies of 125 Hz or less.

2.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The

sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

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

2.9 Ground Absorption

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

2.10 Sound Attenuation

Noise-related land use issues are typically composed of three basic elements: (1) the noise source, (2) a transmission path, and (3) a receiver.

The appropriate acoustical treatment for a given project should consider the nature of the noise source and the sensitivity of the receiver. When the potential for a noise-related problem is present, either avoidance of the noise-related problem or noise control techniques should be selected to provide an acceptable noise environment for the receiver while remaining consistent with local aesthetic standards and practical structural and economic limits. Fundamental noise control options are described below.

2.10.1 Noise Barriers

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. To achieve that reduction, the barrier must be high enough and long enough to block the line-of-sight of the vehicles on the road. A noise barrier can still achieve a 5 dBA noise level reduction when it is tall enough to barely allow a line-of-sight of the vehicles. A noise barrier is most effective when placed close to the noise source or receiver. When the noise barrier is an earthen berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

2.10.2 Setbacks

Noise exposure may be reduced by increasing the setback distance between the noise source and the receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, and storage yards. The available noise attenuation from this technique is limited by the characteristics of the noise source but generally ranges between 4 and 6 dBA.

2.10.3 Site Design

Buildings can be placed on a property to shield other structures or areas affected by noise and to prevent an increase in noise levels caused by reflections. The use of one building to shield another can significantly reduce overall noise control costs, particularly if the shielding structure is insensitive to noise. An example would be placing a detached garage nearest the noise source to shield the house or backyard. Site design should guard against creating reflecting surfaces that may increase onsite noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dBA. The open end of U-shaped buildings should point away from noise sources for the same reason. Landscaping walls or noise barriers located within a development may inadvertently reflect noise to a noise-sensitive area unless carefully located.

2.10.4 Building Facades

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through the acoustical design of building facades. Standard construction practices provide a noise reduction of 10–15 dBA for building facades with open windows and a noise reduction of approximately 25 dBA when windows are closed (Table 5). An exterior-to-interior noise reduction of 25 dBA can be obtained by requiring that building design include adequate ventilation systems, which would allow windows facing a noise source to remain closed, even during periods of excessively warm weather.

Where greater noise reduction is required, acoustical treatment of the building facade may be necessary. Reducing relative window area is the most effective control technique, followed by providing acoustical glazing (e.g., thicker glass or increased air space between panes) within frames with low air infiltration rates, using fixed (i.e., non-movable) acoustical glazing, or eliminating windows. Noise transmitted through walls can be reduced by increasing wall mass (e.g., using stucco or brick in lieu of wood siding), or isolating wall members by using double or staggered stud walls, while noise transmitted through doorways can be lessened by reducing door area, using solid-core doors, or sealing door perimeters with suitable gaskets. Noise-reducing roof treatments include using plywood sheathing under roofing materials.

Table 5: Noise Reduction Afforded by Common Building Construction

Construction Type	Typical Occupancy	General Description	Range of Noise Reduction (dB)[1]
1	Residential, Commercial, Schools	Wood frame, stucco, or wood sheathing exterior. Interior drywall or plaster. Sliding glass windows, with windows partially open.	15-20
2	Same as 1 above	Same as 1 above, but with windows closed.	25-30
3	Commercial, Schools	Same as 1 above, but with fixed 0.25-inch plate glass windows.	30-35
4	Commercial, Industrial	Steel or concrete frame, curtain wall, or masonry exterior wall. Fixed 0.25-inch plate glass windows.	35-40

Source: California Airport Land Use Planning Handbook, 2002.

2.10.5 Landscaping

While the use of trees and other vegetation is often thought to provide significant noise attenuation, approximately 100 feet of dense foliage, with no visual path extending through the foliage, is required to achieve a 5 dBA attenuation of traffic noise. Thus, the use of vegetation as a noise barrier is not considered a practical method of noise control unless large tracts of dense foliage are part of the existing landscape.

Vegetation can be used, however, to acoustically "soften" intervening ground between a noise source and a receiver, increasing ground absorption of sound, and thus, increasing the attenuation of sound with distance. Planting trees and shrubs also offers aesthetic and psychological value, and it may reduce adverse public reaction to a noise source by removing the source from view, even though noise levels would be largely unaffected.

3.0 Ground-Borne Vibration Fundamentals

3.1 Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors, where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and mainly exists indoors since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves. Several different methods are used to quantify vibration amplitude. Typical human reaction and effect on buildings due to ground-borne vibration is shown in Table 6. Exhibit G illustrates common vibration sources and the human and structural responses to ground-borne vibration.

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

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

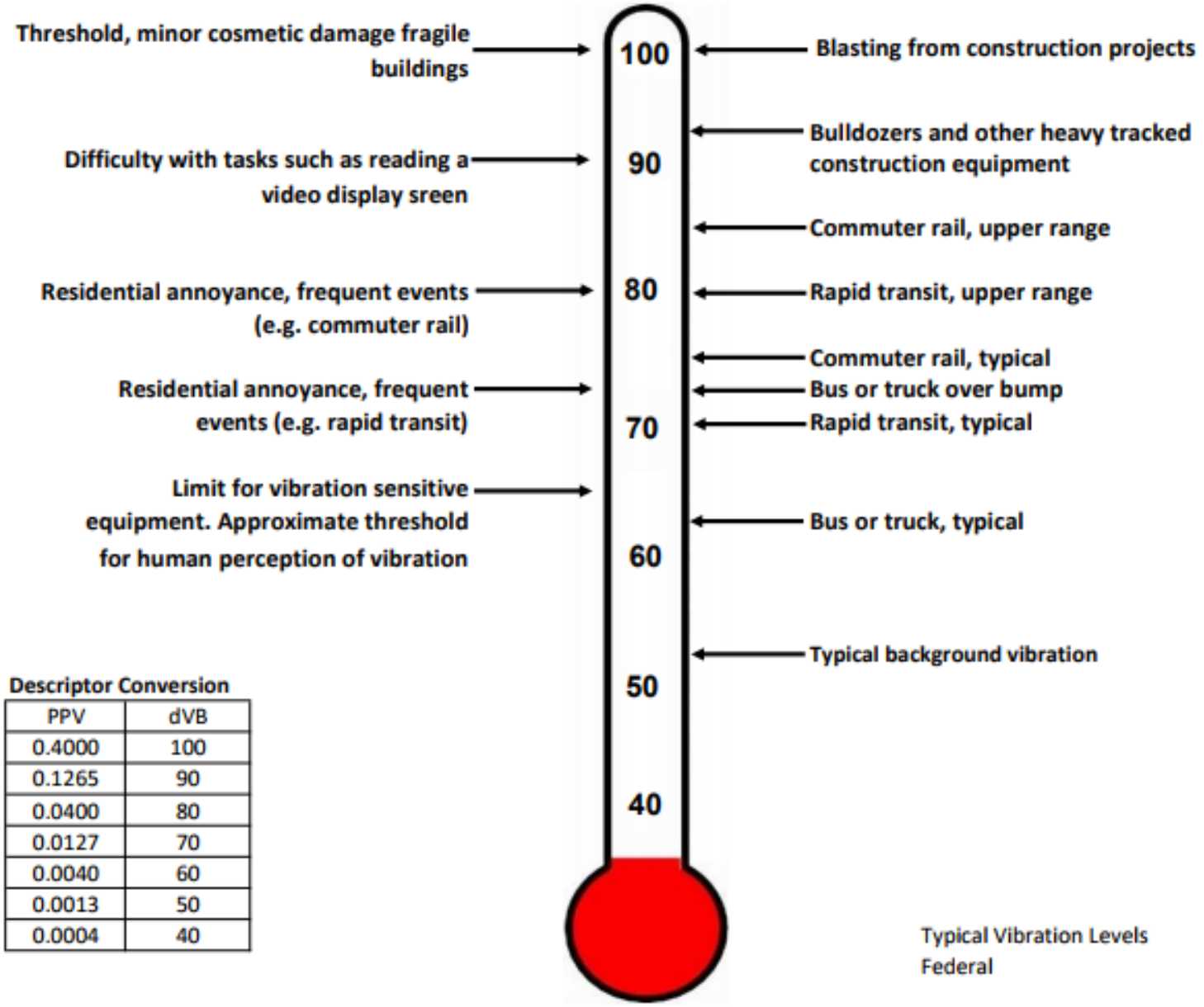
VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

Table 6: Typical Human Reaction and Effect on Buildings Due to Ground-Borne Vibration

Vibration Level Peak Particle Velocity (PPV)	Human Reaction	Effect on Buildings
0.006–0.019 in/sec	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08 in/sec	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10 in/sec	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e., not structural) damage to normal buildings
0.20 in/sec	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6 in/sec	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage
Source: Caltrans Transportation and Construction Vibration Guidance Manual, 2020.		

Exhibit G

Typical Ground-Borne Vibration Levels



Descriptor Conversion

PPV	dVB
0.4000	100
0.1265	90
0.0400	80
0.0127	70
0.0040	60
0.0013	50
0.0004	40

Typical Vibration Levels
Federal

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations, and although the Project is not subject to these regulations, it serves as a useful tool to evaluate vibration impacts. (California Department of Transportation, 2020).

3.3 Vibration Propagation

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation. As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. This drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

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

4.1 Federal Regulations

4.1.1 Noise Control Act of 1972

The Federal Office of Noise Abatement and Control (ONAC) was originally tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows:

- The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies.
- The Federal Aviation Agency (FAA) regulates noise from aircraft and airports.
- The Federal Highway Administration (FHWA) regulates noise from the interstate highway system.
- The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers.

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

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

The intent of a General Plan Noise Element or Section is to set goals to limit and reduce the effects of noise intrusion and to set acceptable noise levels for varying types of land uses. To this end, the City has the authority to set land use noise standards and restrict private activities that generate excessive or intrusive noise. However, it should be recognized that the City does not have the authority to regulate all sources of noise within the City and various other agencies may supersede City authority. The following is a summary of some federal agency requirements that apply to noise within the Project Area.

4.1.2 Federal Highway Administration

Federal Highway Administration State routes and freeways that run through the City are subject to Federal funding and, as such, are under the purview of the Federal Highway Administration (FHWA). The FHWA has developed noise standards that are typically used for Federally funded roadway projects or projects that require either Federal or Caltrans review. These noise standards are based on Leq and L10 values and are included in Table 7, FHWA Design Noise Levels.

Table 7: FHWA Design Noise Levels

Activity Category	Description of Category	Design Noise Levels[1]	
		Leq (dBA)	L10 (dBA)
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Examples include natural parks or wildlife habitats.	57 (exterior)	60 (exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (exterior)	70 (exterior)
C	Developed lands, properties, or activities not included in Categories A or B, above.	72 (exterior)	75 (exterior)
D	Undeveloped lands.		
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (interior)	55 (interior)

Source: FHWA Noise Standard. 23 Code of Federal Regulations 772.
Notes: Either Leq or L10 (but not both) design noise levels may be used on a project.

U.S. Department of Housing and Urban Development
The Department of Housing and Urban Development (HUD) issues formal requirements related specifically to standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established three zones. These include:

- 65 dBA Ldn or less - an acceptable zone where all projects could be approved,

- Exceeding 65 dBA Ldn but not exceeding 75 dBA Ldn - a normally unacceptable zone where mitigation measures would be required, and each Project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA Ldn area and 10 dBA of attenuation in a 70 to 75 dBA Ldn area, and

- Exceeding 75 dBA Ldn - an unacceptable zone in which projects would not, as a rule, be approved.

4.1.3 The Federal Interagency Committee on Noise

The Federal Interagency Committee on Noise (FICON) developed guidance for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies of the percentage of persons highly annoyed by aircraft noise. These recommendations are often used for different types of environmental noise such as traffic noise. A readily perceptible 5 dBA or greater project-related noise level increase is considered a significant impact

when the noise criteria for a given land use is exceeded. In areas where the existing noise levels range from 60 to 65 dBA Ldn, a 3 dBA barely perceptible noise level increase is considered significant. When the existing noise levels already exceed 65 dBA Ldn, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact since it likely contributes to an existing noise exposure exceedance.

4.2 State Regulations

4.2.1 California Department of Health Services

The California Department of Health Services (DHS) Office of Noise Control studied the correlation between noise levels and their effects on various land uses. As a result, the DHS established four categories for judging the severity of noise intrusion on specified land uses. These categories are presented in the State Land Use Compatibility for Community Noise Exposure table (California Office of Noise Control, 2017).

4.2.2 The California Building Code

Section 1206.4 of the 2022 California Building Code (Cal. Code Regs., Title 24, Part 2), Chapter 12 (Interior Environment), establishes an interior noise criterion of 45 dBA CNEL in any habitable room. Per California Building Code, Chapter 2 (Definitions), a habitable space is A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces. This section applies to dwelling and sleeping units.

4.2.3 California Green Building Standards Code

California Green Building Standards Code (2022), Chapter 5 (Non-residential Mandatory Measures) Section 5.507.4 (Acoustical Control), applies to all proposed buildings that people may occupy but are not residential dwelling units, with the exception of factories, stadiums, storage, enclosed parking structures, and utility buildings.

Buildings must comply with Section 5.507.4.1 or Section 5.507.4.2. Section 5.507.4.1 requires wall and roof-ceiling assemblies exposed to the noise source making up the building, or addition envelope or altered envelope, shall meet a composite Sound Transmission Class (STC) rating of at least 50 or a composite Outdoor to Indoor Transmission Class (OITC) rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 when within the 65 CNEL noise contour of an airport, freeway, expressway, railroad, industrial source, or fixed-guideway source. If contours are not available, buildings exposed to 65 dB Leq(h) must meet a composite STC rating of at least 45 or OITC of 35 with exterior windows of at least STC 40 or OITC 30. Section 5.507.4.2 requires that the interior noise attributable to exterior sources must not exceed 50 dBA Leq(h) during any hour of operation. Section 5.507.4.3 requires that assemblies separating tenant spaces from tenant spaces or public places must have an STC of at least 40.

4.3 City of Laguna Niguel

Existing planning policies and noise regulations applicable to noise within the City of Laguna Niguel are presented in the Noise Element of the City of Laguna Niguel General Plan 1992 and within the City of Laguna Niguel Municipal Code. Applicable goals, policies, and regulations are presented below.

4.3.1 City of Laguna Niguel General Plan 1992

General Plan Goals, Policies and Actions
The 1992 General Plan Noise Element includes the following goals, policies and actions that will be taken to avoid or reduce noise impacts related to transportation, stationary, and construction related noise sources.

Goal 1: Establishment of exterior and interior noise environments for land uses that will protect citizens from excessive noise.

> *Policy 1.1:* Discourage noise sensitive land uses in noisy exterior environments unless measures can be implemented to reduce exterior and interior noise to acceptable levels. Alternatively, encourage less sensitive uses in area adjacent to major noise generators but require appropriate interior working environments.
>
> > *Action 1.1.1:* Incorporate measures into all development projects to attenuate exterior/interior noise levels to acceptable levels. The City's noise standards for land use compatibility are provided in Table N-9 (Table 8 in this report). These standards shall be adhered to and implemented during the review of all proposed development projects.

Table 8: Interior and Exterior Noise Standards for Land Use Compatibility (dBA CNEL)

Land Use	Interior Standard	Exterior Standard
Residential Detached/Attached	45	65
Neighborhood Commercial Community Commercial	--	70
Professional Office	50	70
Community Commercial/Professional Office	--	70
Industrial/Business Park	55[1]	75
Professional Office/Industrial/Business Park Industrial/Business Park/Professional Office/Community Commercial	--	75
Public/Institutional Public Institutional/Professional Office	50	70
Schools	50[2]	65[2]
Parks and Recreation	--	70

Notes:
[1] Where quiet is a basis for use
[2] In interior and exterior Classroom Areas during school operating hours

Goal 2: Land use planning that provides for the separation of significant noise generators from sensitive receptor areas.

Policy 2.1: Locate noise tolerant land uses in areas currently impacted by noise, such as adjacent to master planned roadways or within the contours of the United States Marine Corps Air Station at El Toro.

Policy 2.2: Ensure that current noise hazard areas in the City are identified, quantified, and mapped in a form that is available to decision makers.

Action 2.2.1: Require a revision to the noise contour map with every General Plan Update.

Policy 2.3: Utilize the information from the noise contour map in the General Plan in the development review process to ensure that noise sensitive land uses are not located near major stationary noise sources.

Policy 2.4: Minimize noise conflicts between land uses and the circulation network.

Action 2.4.1: Consider noise mitigation measures in the design of all future streets and highways and when improvements occur along existing highway segments. Measures will emphasize the establishment of buffers between roadways and adjoining noise sensitive areas.

Goal 3: Promote the control of noise between land uses.

Policy 3.1: Limit the maximum permitted noise levels which cross property lines and impact adjacent land uses.

Action 3.1.1: Implement the City's Noise Ordinance to regulate noise for various land use categories and for sensitive time periods.

Goal 4: The control of noise from significant noise generators in the community.

Policy 4.1: Regulate noise from construction activities.

Action 4.1.1: Enforce the Noise Ordinance for all non-emergency construction operations.

Goal 5: The consideration of noise issues in the planning process.

Policy 5.1: Evaluate potential noise conflicts for individual sites and projects.

Action 5.1.1: During review of development applications, consider noise impact of the proposed land use on the existing and future noise environment of existing or planned contiguous uses.

Action 5.1.2: Require proposed noise producing projects to have an acoustical engineer prepare a noise analysis with recommendations for special design measures if the project is to be located close to existing or planned noise sensitive land uses.

Action 5.1.3: Require proposed noise sensitive projects within noise impacted areas to have acoustical studies prepared by a qualified acoustical engineer and to provide special design measures to protect noise sensitive uses from ultimate projected noise levels.

Action 5.1.4: For projects close to master planned roadways, utilize the ultimate roadway capacity at Level-of-Service D and the posted speed limit to estimate maximum future noise impacts.

Action 5.1.5: Discourage projects that are incapable of successfully mitigating excessive noise.

Policy 5.2: Require mitigation of all significant noise impacts as a condition of project approval.

Action 5.2.1: Consider site design techniques as the primary means to minimize noise impacts.

- Utilize building setbacks to increase the distance between the noise source and receiver.
- Promote the placement of noise tolerant land uses such as parking lots, maintenance facilities, and utility areas between the noise source and receptor.
- Orient buildings to shield outdoor spaces from a noise source. Quiet outdoor spaces can be provided by creating a U-shaped development which faces away from the roadway or by clustering land uses.

Action 5.2.2: Require developers to consider alternative architectural layouts as a means of meeting noise reduction requirements.

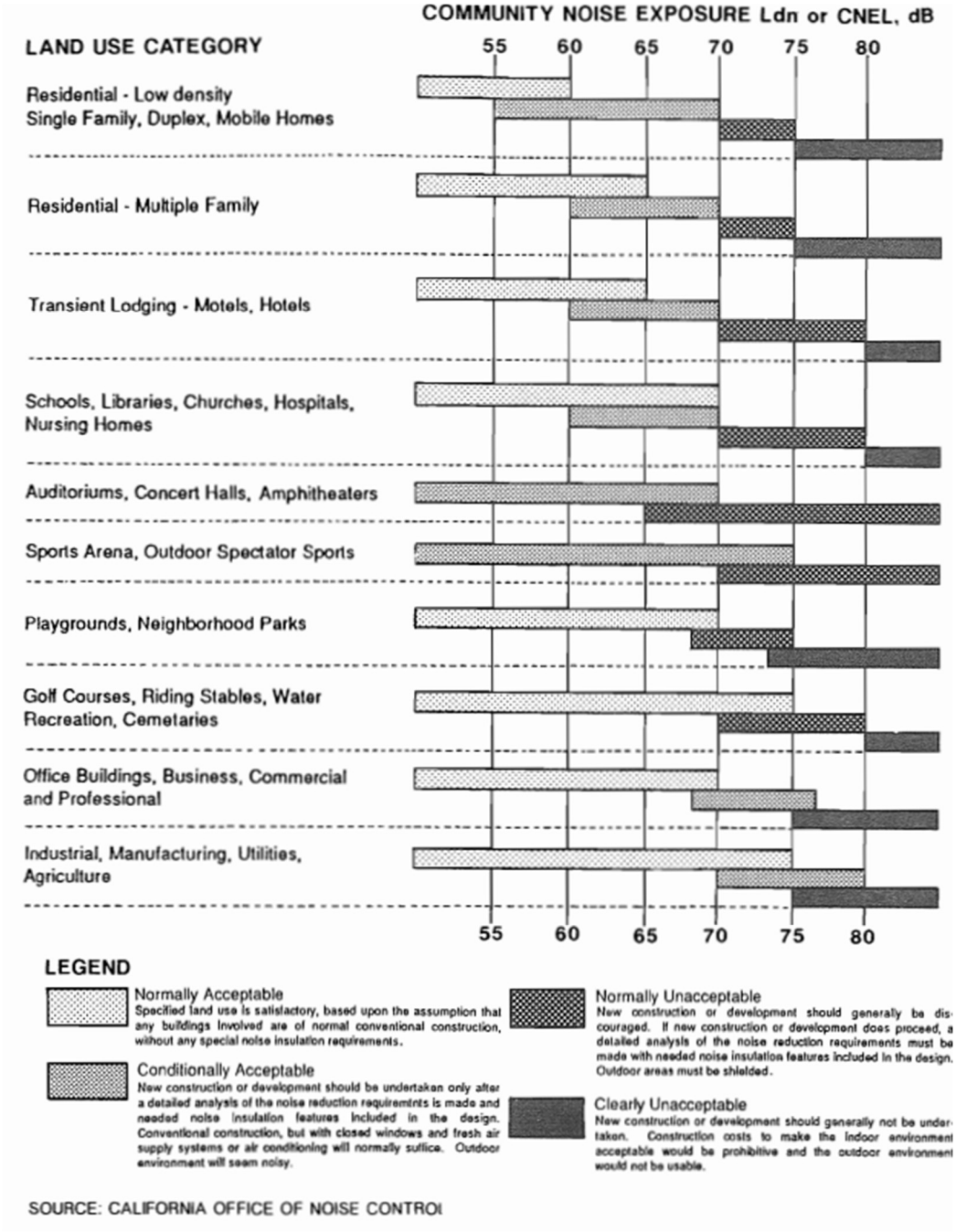
- Place bedrooms on the side of the house facing away from major roadways. The use of noise tolerant rooms such as garages, bathrooms and kitchens to shield noise-sensitive areas will be encouraged.
- When bedrooms cannot be located on the side of a house away from a major roadway, require extra insulation and double-pane windows.
- Avoid balconies facing major travel routes. Development proposals including balconies in the design will need to be evaluated for potential noise impacts during the environmental review process.

Noise/Land Use Compatibility

Exhibit H, Noise and Land Use Compatibility presents a land use compatibility chart for community noise originally prepared by the California Office of Noise Control. The table identifies “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable” exterior noise levels for various land uses. A “conditionally acceptable” designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a

"normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements. This land use compatibility chart is based on the 24-hour descriptor CNEL.

Exhibit H: Existing Noise and Land Use Compatibility



4.3.2 City of Laguna Niguel Municipal Code

The Noise Ordinance of the Municipal Code is designed to protect people from non-transportation noise sources such as construction activity; commercial, industrial, and agricultural operations; machinery and pumps; and air conditioners. Enforcement of the ordinance ensures that adjacent properties are not exposed to excessive noise from stationary sources. Enforcing the ordinance includes requiring proposed development projects to show compliance with the ordinance, including operating in accordance with noise levels and hours of operations limits placed on the project site. The City also requires construction activity to comply with established work schedule limits. The ordinance is reviewed periodically for adequacy and amended as needed to address community needs and development patterns.

The City of Laguna Niguel's Noise Ordinance consists of Division 6 within Title 6 of the Laguna Niguel Municipal Code.

Section 6-6-1 prohibits unnecessary, excessive, and annoying noises.

Section 6-6-2 outlines definitions regarding the chapter.

Section 6-6-3 outlines the required sound level meter settings for sound level measurements.

Section 6-6-4 states that the entire territory of the City of Laguna Niguel is designated as "Noise Zone 1".

Section 6-6-5 defines noise characteristics to consider when determining whether or not exterior noise is in violation of the chapter.

Table 9: Exterior Noise Level Limits

Noise Zone	Noise Level (dBA)	
	Day (7AM-10PM)	Night (10PM-7AM)
1	55	50

Section 6-6-6 defines noise characteristics to consider when determining whether or not interior noise is in violation of the chapter.

Section 6-6-7 states certain activities (outdoor/public gatherings, emergency work, school activity, etc.) that are exempt from the division. Noise from agricultural operations and construction is only exempt within the acceptable working hours of 7:00 a.m. and 8:00 p.m. on weekdays, including Saturday. This section also lists unusual and unique conditions in which construction noise may be permitted outside acceptable hours.

Section 6-6-8 states special provisions relating to noise levels at schools, hospitals, and churches.

Sections 6-6-8.1 and 4-6-9 outline policies related to motor vehicle racing, air conditioning, and refrigeration.

Section 6-6-10 outlines standards regarding noise level measurements done on affected properties.

Sections 6-6-11 through 6-6-15 outline enforcement policies, variance procedures, and the requirements regarding the creation of a noise variance board and submitting appeals to them.

4.3.3 CEQA Guidelines

The City of Laguna Niguel's CEQA Manual (2023) defines the following thresholds of significance with regards to noise and vibration:

Construction Noise: Typically, construction noise does not cause substantial noise at distances beyond 500 feet from construction activities or when construction is limited to allowed days and times. Therefore, the following noise screening criteria may be used for a new project construction:

- Would construction activities occur within 500 feet of a noise sensitive use?
- Would construction occur between the hours of 8:00 p.m. and 7:00 a.m. Monday through Saturday, or anytime on Sunday or federal holidays?

  A "yes" response to either of the preceding questions indicates further study is required.

Based on the above criteria, projects that do not qualify for an exemption from a construction noise assessment shall prepare a detailed analysis of construction noise impacts on sensitive receptors according to the methodology and criteria contained in the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* dated September 2018 (FTA Manual) or most current version. Specifically, the construction noise assessment shall be prepared in accordance with "Option B: Detailed Analysis" included in the FTA Manual. The thresholds of significance applied to construction projects within the City are the FTA standards found in Table 7-3 of the FTA Manual titled, *Table 7-3 Detailed Analysis Construction Noise Criteria*. For a development project adjacent to residential receptors, the daytime construction noise threshold is 80 dBA Leq 8 hour. Nighttime construction activities are generally prohibited by the Laguna Niguel Municipal Code, however if an exemption is provided, the construction noise thresholds found in Table 7-3 of the FTA Manual would also apply to nighttime construction. The Nighttime threshold of significance for construction noise at residential properties is 70 dBA Leq 8 hour.

Operational Noise: Project operational impacts are generally due to the project including single or multiple noise sources within the project site (stationary sources) or causing increases in vehicular traffic on city streets (mobile sources), or both. Therefore, the following operational noise screening criteria may be used for a new project:

- Would the proposed project introduce a stationary noise source audible beyond the property line of the project site?
- Would the project include 75 or more dwelling units, 100,000 square feet or greater of nonresidential development, or have the potential to generate 1,000 or more average daily vehicle trips?

  A "no" response to both preceding questions indicates no further study is required. A "yes" response to either of the preceding questions indicates further study of operational noise impacts is required.

If the above screening process for a project indicates that further study of operational noise effects is required, the following significance thresholds apply.

Mobile Sources:
A project would have a significant noise impact on nearby noise-sensitive land uses if:

- The project causes ambient exterior noise levels at nearby noise-sensitive uses to increase above the City's exterior noise standards in Table 8 (i.e., 65 dB CNEL for residential land uses); or
- Baseline noise levels at nearest noise-sensitive land uses without the project are below 55 dBA CNEL and the project results in noise level increases of 10 dBA CNEL or more in ambient noise levels; or
- Baseline noise levels at nearest noise-sensitive land uses without the project are in the range of 55-60 dBA CNEL and the project results in ambient noise levels that are 5 dBA CNEL or more above baseline noise levels; or
- Baseline noise levels at nearest noise-sensitive land uses without the project are above 60 dBA CNEL and the project results in a noise level increase of 3 dBA CNEL or more above baseline noise levels.

Stationary Sources:
Laguna Niguel Municipal Code Division 6 establishes noise standards applicable to stationary sources. Section 6-6-5 establishes exterior noise standards as shown in Table 9, which constitute the thresholds of significance for stationary sources (i.e. 55 dBA Leq between 7 AM to 10 PM and 50 dBA Leq between 10 PM to 7 AM).

A significant impact would occur if noise levels on any other residential property exceed:

1. The noise standard for a cumulative period of more than 30 minutes in any hour;
2. The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour;
3. The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour;
4. The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour; or

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

Interior Noise:

As shown in Table 5, the Laguna Niguel General Plan has set interior CNEL standards for various noise-sensitive land use categories. Interior noise standards are also regulated by California Building Code Title 24. Generally, the effect of noise from the surrounding environment does not need to be analyzed within a CEQA document but must show compliance with the Title 24 standards. However, pursuant to *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, Case No. S213478, "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the *project's* impact on the environment—and not the *environment's* impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." Therefore, if a project introduces a sensitive land use, such as residential, into a noisy environment and the project will exacerbate the existing noisy environment, the project may need to include a noise study to demonstrate how the project would be impacted by the project's contribution to the noisy environment. Furthermore, pursuant to *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, Case No. S213478, housing projects that require an interior noise analysis include, CEQA Housing Exemptions, Agricultural Employee Housing Exemptions, Low Income Housing Exemptions, and Infill Housing Exemptions.

Vibration: The state CEQA Guidelines do not define the levels at which groundborne vibration or groundborne noise would be considered "excessive." However, California Department of Transportation (Caltrans) has published criteria for the analysis of vibration relating to transportation- and construction-induced vibration. Caltrans has established thresholds that pertain to both building damage and human annoyance from groundborne vibration. Therefore, through adoption of this Manual the City has established the following standards from Caltrans as the thresholds of significance for vibration impacts, as shown in Tables 10 and 11 below.

Table 10 lists the vibration damage criteria for several categories of building structures. These criteria are expressed in terms of Peak Particle Velocity (PPV). PPV is the maximum instantaneous positive or negative peak of the vibration signal, often used in monitoring of construction vibration (such as blasting) since it is related to the stresses that are experienced by buildings.

Criteria listed in Table 11 are thresholds of vibration levels that would result in people's annoyance or interference with daily activities. These levels are also expressed in terms of PPV. Vibration levels that are "distinctly perceptible" or worse are adopted by the City as its thresholds of significance.

It should be noted, projects using only equipment that generates little or no ground vibration, such as air compressors, light trucks, and hydraulic loaders, would only require qualitative descriptions. A quantitative construction vibration analysis is appropriate for projects where construction vibration may result in building damage or prolonged annoyance. For example, activities involving blasting, piledriving, vibratory compaction, demolition, drilling, or heavy grading or excavation near sensitive structures require a quantitative vibration analysis.

Table 10: Vibration Damage Threshold Criteria

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

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

Table 11: Groundborne Vibration Potential Annoyance Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

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

5.0 Study Method and Procedure

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

5.1 Noise Measurement Procedure and Criteria

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

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

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

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

5.2 SoundPLAN Noise Modeling

SoundPLAN acoustical modeling software was utilized to create existing (2024), Current General Plan Buildout (2045), and Proposed General Plan Buildout (2045) traffic noise level contours for the 34 segments analyzed in the City of Laguna Niguel General Plan Update Traffic Study provided by Linscott, Law & Greenspan, Engineers. Model parameters included average daily traffic volumes, day/evening/night split, roadway classification, width, speed, and truck mix. All modeled roadways were assumed to have a “hard site”, as the analysis occurs at 50 feet from the centerline of the road. Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis. Roadway modeling assumptions utilized for the technical study are provided in Table 12 and Table 13 and in Appendix C. A summary of the model parameters and REMEL adjustments is presented below.

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

5.3 FHWA Traffic Noise Prediction Model

The FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) was utilized to model and compare existing traffic noise levels to 2045 Future noise levels. The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Roadway modeling assumptions utilized for the technical study are provided in Table 12 and Table 13.

Table 12: Roadway Noise Modeling Parameters

Roadway	Segment	Existing (2024) ADT[1]	Current GP Buildout (2045) ADT[1]	Proposed GP Buildout (2045) ADT[1]	Speed [2]	Vehicle Mix[3]
Pacific Park Drive	Alicia Parkway to La Paz Road	25,800	34,100	32,100	45	Major
Alicia Parkway	Pacific Park Drive to Avila Road	24,400	24,600	24,700	50	Major
La Paz Road	Pacific Park Drive to Avila Road	16,400	19,300	17,800	40	Major
Moulton Parkway	North of Avila Road	17,900	19,800	20,600	50	Major
Alicia Parkway	Avila Road to Aliso Creek Road	24,700	24,500	24,900	50	Major
La Paz Road	Avila Road to Aliso Creek Road	13,600	14,100	12,700	45	Major
Moulton Parkway	Avila Road to Aliso Creek Road	19,800	22,000	22,600	50	Major
Aliso Creek Road	Alicia Parkway to La Paz Road	19,100	27,000	21,700	45	Major
Aliso Creek Road	La Paz Road to Moulton Parkway	12,100	18,100	16,800	40	Primary
Alicia Parkway	Aliso Creek Road to Highlands Avenue	38,600	39,800	41,100	50	Major
La Paz Road	Aliso Creek Road to Rancho Niguel Road	12,300	13,900	9,100	45	Primary
Moulton Parkway	Aliso Creek Road to Rancho Niguel Road	28,400	36,500	35,800	50	Major
Rancho Niguel Road	Moulton Parkway to Greenfield Drive	15,200	16,000	16,500	35	Commuter
Crown Valley Parkway	Greenfield Drive to Cabot Road	39,200	37,700	41,500	45	Major
Crown Valley Parkway	Cabot Road to Forbes Road	58,500	56,300	59,600	40	Major
Moulton Parkway	Rancho Niguel Road to Crown Valley Parkway	18,500	26,000	23,800	50	Major
Crown Valley Parkway	Moulton Parkway/Golden Lantern to Greenfield Drive	36,200	32,900	37,500	50	Major

Roadway	Segment	Existing (2024) ADT[1]	Current GP Buildout (2045) ADT[1]	Proposed GP Buildout (2045) ADT[1]	Speed [2]	Vehicle Mix[3]
Paseo de Colinas	Golden Lantern to Cabot Road	18,600	15,900	21,300	45	Primary
Paseo de Colinas	Cabot Road and Camino Capistrano	13,500	14,500	19,300	45	Primary
Alicia Parkway	Highlands Avenue to Niguel Road	37,000	37,800	38,000	50	Major
Crown Valley Parkway	La Paz Road to Moulton Parkway/Golden Lantern	27,700	26,800	30,300	45	Major
Golden Lantern	Crown Valley Parkway to Paseo de Colinas	22,400	27,600	26,200	45	Major
Crown Valley Parkway	Niguel Road to La Paz Road	27,500	27,100	28,100	45	Major
Golden Lantern	Paseo de Colinas to Marina Hills Drive/Camino Los Padres	34,300	31,700	37,600	45	Major
Crown Valley Parkway	Alicia Parkway to Club House Drive	23,400	25,900	26,000	50	Major
Niguel Road	Crown Valley Parkway to Marina Hills Drive	19,900	20,800	19,900	40	Primary
Pacific Island Drive	Club House Drive to Starview Lane	4,300	4,500	4,500	45	Primary
Niguel Road	Marina Hills Drive to Club House Drive	13,100	12,300	13,100	50	Primary
Golden Lantern	Chapparosa Park Road to Beacon Hill Way	20,400	27,000	23,800	50	Primary
Crown Valley Parkway	Club House Drive to Pacific Island Drive/Camino Del Avion	26,900	26,900	27,800	50	Major
Niguel Road	Ridgeway Avenue to Camino Del Avion	13,500	12,800	13,600	50	Primary
Golden Lantern	Beacon Hill Way to Camino Del Avion	19,100	23,900	22,500	50	Major
Camino Del Avion	Crown Valley Parkway to Niguel Road	11,200	11,100	12,100	45	Primary
Camino Del Avion	Niguel Road to Golden Lantern	16,500	17,100	18,100	45	Primary

Notes:
1) Linscott, Law & Greenspan, Engineers, 2025.
2) Speed was modeled as posted.
3) See Table 13.

Table 13: Vehicle Mix Data

Motor-Vehicle Type[1]	Daytime % (7AM to 7 PM)	Evening % (7 PM to 10 PM)	Night % (10 PM to 7 AM)	Total % of Traffic Flow
Automobiles	85.5%	8.6%	5.9%	97.4%
Medium Trucks	84.8%	4.9%	10.3%	1.8%
Heavy Trucks	86.5%	2.7%	10.8%	0.7%

Notes:
[1] 24 hour vehicle distribution taken from Laguna Niguel 24hr traffic counts, Linscott, Law & Greenspan, Engineers, 2025.
[2] Vehicle mix distribution based on typical California traffic patterns.

6.0 Existing Noise Environment

6.1 General Land Use Noise

Existing land uses within the Project Area include single and multiple-family residential development, commercial, industrial, open space, and public facility land uses. Noise sources associated with existing land uses include residential maintenance, parking lot noise, heating, and cooling system (HVAC) noise, property maintenance noise, trash truck noise, loading and unloading noise, and recreational noise.

6.2 Noise Measurements

Five (5) long-term 24-hour noise measurements and eight (8) short-term 15-minute noise measurements were conducted throughout the Project Area to document the existing noise environment. Noise measurement locations are shown in Exhibit I.

6.2.1 Short-Term Noise Measurements

Eight short-term noise measurements (15-minute) were taken on February 18th, 2025, and February 19th, 2025, in order to document the daytime Leq level at different locations throughout the Project Area. Measured noise levels ranged between 47.2 and 68.0 dBA Leq. Vehicle noise associated with Crown Valley Parkway, Golden Lantern, and Niguel Road noise were the primary sources of ambient noise. Noise measurement results are presented in Table 14. Field notes and meter output are provided in Appendix B.

Table 14: Short-Term Noise Measurement Summary

Noise Measurement Location	Approximate Location	Start Time	A-Weighted Sound Level (dBA)							
			Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
ST1	27611 La Paz Rd	12:40 PM	67.6	80.3	53.1	75.0	71.9	68.4	64.2	56.6
ST2	24682 Monita Circle	12:12 PM	66.6	80.5	49.0	74.9	70.2	67.0	63.0	56.4
ST3	25891 Crown Valley Pkwy	11:15 PM	74.2	90.4	63.0	79.5	77.9	75.0	71.4	66.7
ST4	28922 Golden Lantern	10:45 PM	61.2	74.8	49.2	66.9	64.2	61.9	59.7	54.0
ST5	28282 Sorrento	9:55 PM	67.6	78.9	57.7	74.9	71.6	67.8	64.9	61.0
ST6	25193 Chapparosa Park Rd	9:32 PM	47.2	61.8	37.3	53.2	50.5	47.3	45.2	41.3
ST7	25189 Beacon Hill Way	9:00 PM	68.0	78.5	41.4	76.1	73.3	68.4	62.9	52.0
ST8	32525 Niguel Rd	8:29 PM	65.8	81.7	54.5	72.0	69.4	66.8	64.0	58.5

6.2.2 Long-Term Noise Measurements

Five (5) long-term noise measurements (24 consecutive hours) were taken in order to document the Community Noise Equivalent Level (CNEL) at different locations throughout the Project Area. As shown in Table 15, the measured CNEL was 72.7 dBA CNEL at 70 feet from the centerline of Pacific Park Drive and 150 feet from the centerline of Alicia Parkway, 75.6 dBA CNEL at 64 feet from the centerline of Alicia

Parkway, 62.3 dBA CNEL at 130 feet from the centerline of Crown Valley Parkway, 68.1 dBA CNEL at 35 feet from the centerline of Pacific Island Drive, and 71.6 dBA CNEL at 70 feet from the centerline of Golden Lantern and 105 feet from the centerline of Camino Del Avion. The primary noise source was vehicle traffic. Table 15 also outlines the daytime (7 AM to 7 PM), evening (7 PM to 10 PM), and nighttime (10 PM to 7 AM) Leq levels at each location. These represent the average level over each time period (day/evening/night). Field notes and meter output are provided in Appendix B.

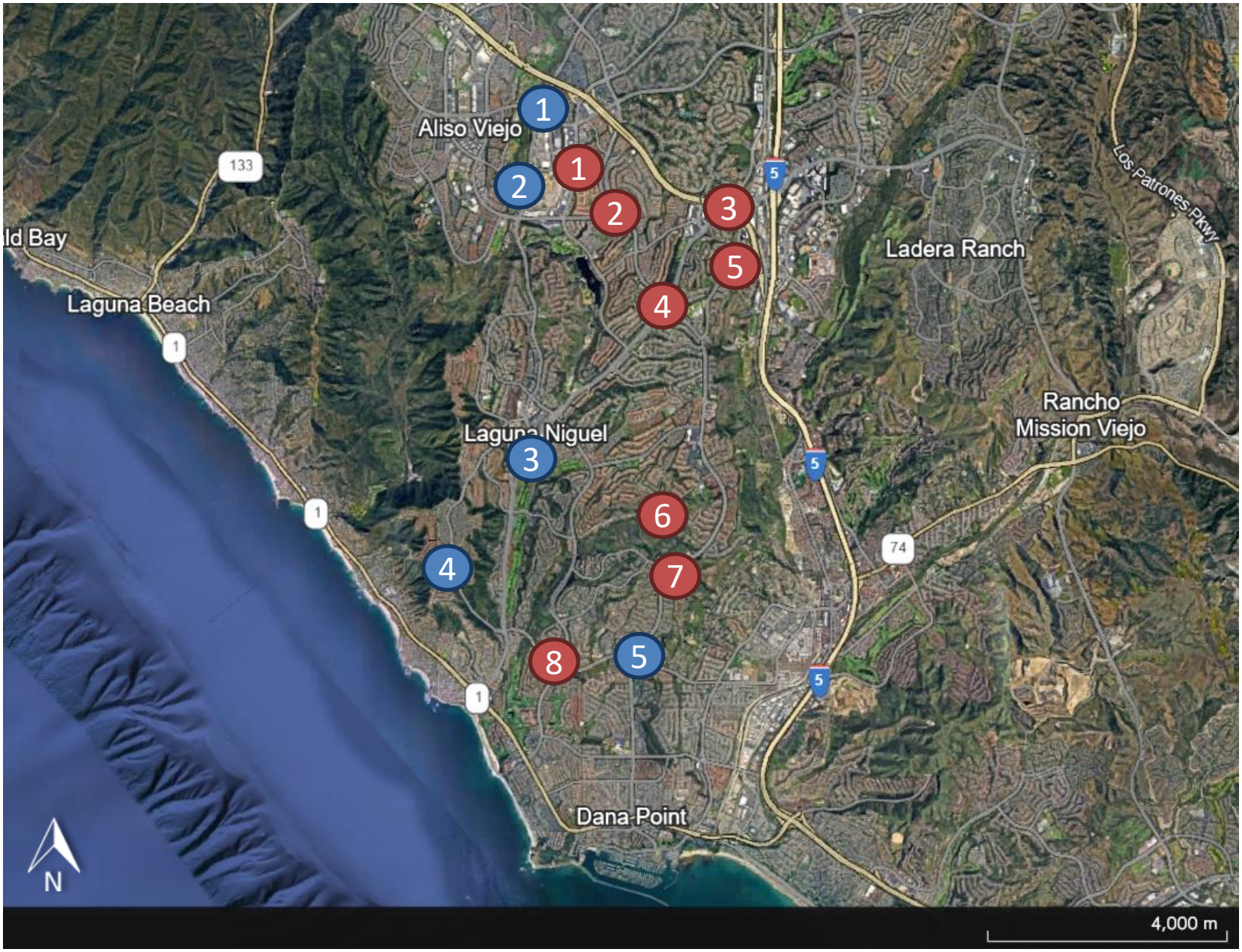
Table 15: Long-Term Noise Measurement Summary

Noise Measurement Location	Approximate Location	Date	Description	A-Weighted Sound Level (dBA)			
				Daytime Leq	Evening Leq	Nighttime Leq	CNEL
LT1	2 Brandy Lane	02/18/25-02/19/25	Alicia Pkwy and Pacific Park Dr traffic noise	70.6	69.5	64.0	72.7
LT2	27745 Alicia Pkwy	02/18/25-02/19/25	Alicia Pkwy (south of Avila Rd) traffic noise	73.9	71.3	67.0	75.6
LT3	23732 Hillhurst Dr	02/18/25-02/19/25	Crown Valley Pkwy traffic noise	62.8	56.4	52.0	62.3
LT4	31412 Paseo De La Playa	02/18/25-02/19/25	Pacific Island Dr traffic noise	68.1	64.2	57.6	68.1
LT5	32411 Golden Lantern	02/18/25-02/19/25	Golden Lantern and Camino Del Avion traffic noise	71.8	65.4	61.8	71.6

Notes:
dBA = A-weighted decibels
Leq = equivalent noise level
Lmax = maximum noise level
Lmin = minimum noise level
Ln = noise level exceeded n percent of the measurement period
24-hour duration

Exhibit I

Measurement Location Map



= Short-Term Monitoring Location

= Long-Term Monitoring Location

6.3 Existing Noise Modeling

The primary sources of noise in Laguna Niguel are transportation-related noises. Major roadways create ambient noise levels that affect the overall quality of life in the community. Modeled existing noise levels provided in Table 16 and on Exhibit J confirm that there are currently sensitive land uses in the project area that are exposed to noise levels above 65 dBA CNEL.

It should be noted that the modeled noise contours do not take into account factors such as existing buildings, walls, etc., that may reduce or, in some cases, amplify or reduce noise sources. The model also assumes hard site, when in reality, some of the City has soft site ground such as grass or dirt, which will reduce the noise levels. Measured noise levels provided in Tables 14 and 15 do take into account existing structures as well as other noise sources.

Those areas in the City that currently experience sound levels greater than 65 dBA CNEL are typically near major vehicular traffic corridors. Traffic noise levels typically depend on three factors: (1) the volume of traffic, (2) the average speed of traffic, and (3) the vehicle mix (i.e., the percentage of trucks versus automobiles in the traffic flow). Vehicle noise includes noises produced by the engine, exhaust, tires, and wind generated by taller vehicles. Other factors that affect the perception of traffic noise include the distance from the highway, terrain, heavy vegetation, and natural and structural obstacles. While tire noise from automobiles is generally located at ground level, some truck noise sources may emanate from 12 feet or more above the ground.

Table 16: Existing Exterior Noise Levels Along Roadways

Roadway	Segment Limits	CNEL, dBA @50 ft	Distance to Contour (feet)			
			70 dBA	65 dBA	60 dBA	55 dBA
Pacific Park Drive	Alicia Parkway to La Paz Road	72.8	95	299	946	2992
Alicia Parkway	Pacific Park Drive to Avila Road	73.7	116	368	1165	3684
La Paz Road	Pacific Park Drive to Avila Road	69.6	45	143	451	1426
Moulton Parkway	North of Avila Road	72.0	79	250	790	2498
Alicia Parkway	Avila Road to Aliso Creek Road	73.4	109	345	1090	3446
La Paz Road	Avila Road to Aliso Creek Road	70.0	50	158	499	1577
Moulton Parkway	Avila Road to Aliso Creek Road	72.4	87	276	874	2763
Aliso Creek Road	Alicia Parkway to La Paz Road	72.5	89	283	894	2827
Aliso Creek Road	La Paz Road to Moulton Parkway	67.4	27	87	275	869
Alicia Parkway	Aliso Creek Road to Highlands Avenue	75.3	170	539	1703	5386
La Paz Road	Aliso Creek Road to Rancho Niguel Road	68.5	35	112	353	1116
Moulton Parkway	Aliso Creek Road to Rancho Niguel Road	74.3	136	429	1356	4288
Rancho Niguel Road	Moulton Parkway to Greenfield Drive	66.4	22	69	218	690
Crown Valley Parkway	Greenfield Drive to Cabot Road	74.6	144	455	1438	4546
Crown Valley Parkway	Cabot Road to Forbes Road	78.1	324	1024	3240	10244
Moulton Parkway	Rancho Niguel Road to Crown Valley Parkway	72.5	88	279	883	2793
Crown Valley Parkway	Moulton Parkway/Golden Lantern to Greenfield Drive	75.4	173	547	1728	5465

Roadway	Segment Limits	CNEL, dBA @50 ft	Distance to Contour (feet)			
			70 dBA	65 dBA	60 dBA	55 dBA
Paseo de Colinas	Golden Lantern to Cabot Road	70.3	54	171	540	1709
Paseo de Colinas	Cabot Road and Camino Capistrano	68.9	39	124	392	1240
Alicia Parkway	Highlands Avenue to Niguel Road	75.5	177	559	1766	5586
Crown Valley Parkway	La Paz Road to Moulton Parkway/Golden Lantern	73.1	102	321	1016	3213
Golden Lantern	Crown Valley Parkway to Paseo de Colinas	71.9	78	246	778	2460
Crown Valley Parkway	Niguel Road to La Paz Road	73.0	101	319	1009	3189
Golden Lantern	Paseo de Colinas to Marina Hills Drive/Camino Los Padres	74.0	126	398	1258	3978
Crown Valley Parkway	Alicia Parkway to Club House Drive	73.4	109	343	1086	3434
Niguel Road	Crown Valley Parkway to Marina Hills Drive	69.4	43	137	434	1371
Pacific Island Drive	Club House Drive to Starview Lane	64.0	12	39	125	395
Niguel Road	Marina Hills Drive to Club House Drive	70.1	52	163	516	1632
Golden Lantern	Chapparosa Park Road to Beacon Hill Way	71.9	78	247	781	2471
Crown Valley Parkway	Club House Drive to Pacific Island Drive/Camino Del Avion	74.1	128	406	1284	4016
Niguel Road	Ridgeway Avenue to Camino Del Avion	70.1	51	161	510	1614
Golden Lantern	Beacon Hill Way to Camino Del Avion	72.5	89	280	886	2803
Camino Del Avion	Crown Valley Parkway to Niguel Road	68.0	31	99	315	995
Camino Del Avion	Niguel Road to Golden Lantern	69.7	46	147	463	1465

Notes:

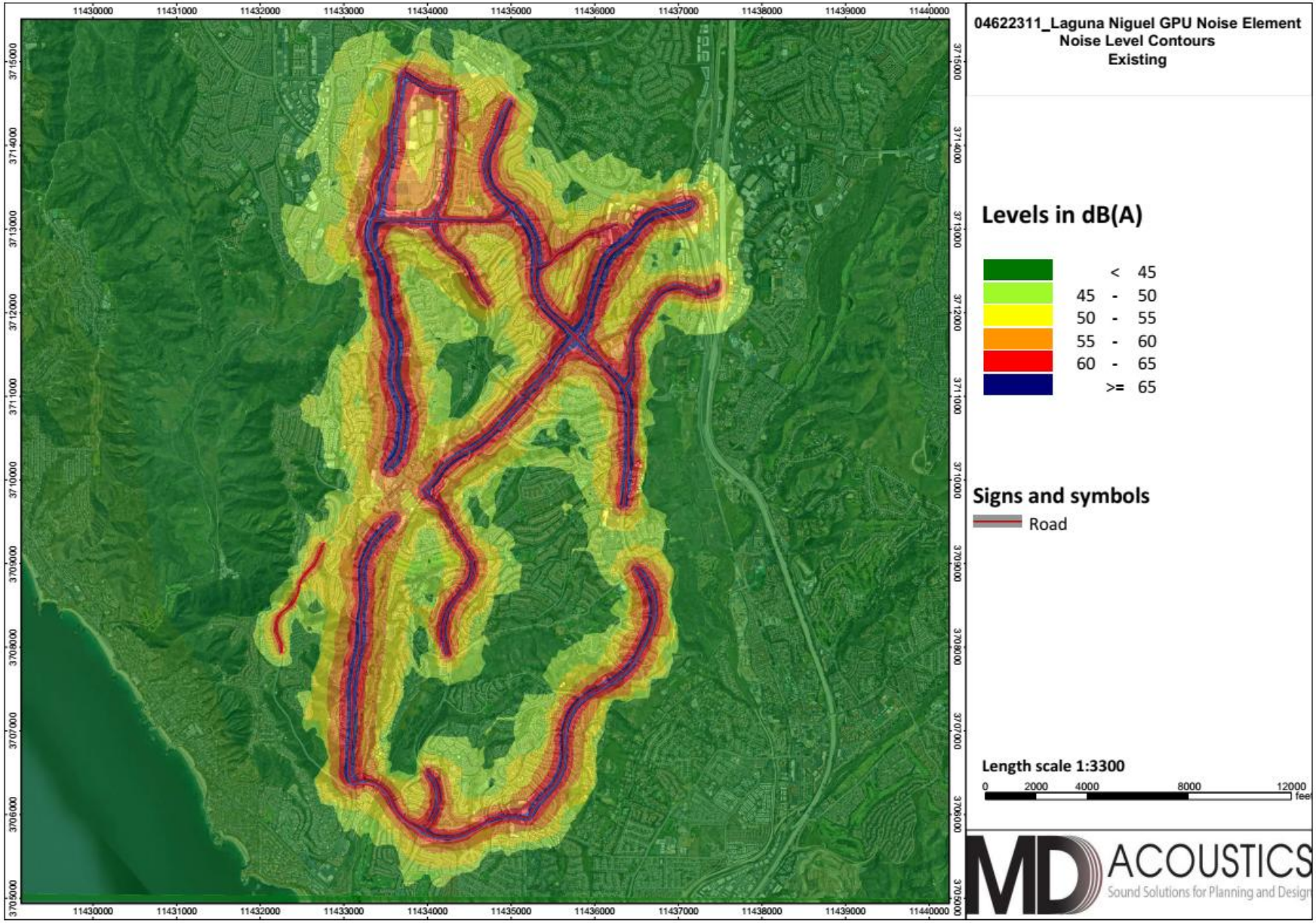
1) Exterior noise levels calculated at 5-feet above ground.

2) Noise levels calculated from centerline of subject roadway.

3) Contour distances do not take into account potential noise reduction from existing barriers such as buildings, walls or berms as a worst-case scenario for planning screening purposes. Overall levels are likely lower at sensitive receptors.

Exhibit J

Existing Roadway Noise Level Contours (CNEL)



6.3 Existing Airport/Aircraft Noise

There are no airports located within the Project Area, and the Project Area is not located within any airport noise contours. The closest airport to the Project Area is the John Wayne Airport, located over 10 miles northwest of the Project Area. The noise contours associated with airports do not encroach into the Project Area.

6.4 Existing Vibration Sources in the Project Area

The main sources of vibration in the Project Area are related to vehicles, construction, and railway. Typical roadway traffic, including heavy trucks, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage. However, there have been cases in which heavy trucks traveling over potholes or other discontinuities in the pavement have caused vibration high enough to result in complaints from nearby residents. These types of issues typically can be resolved by smoothing the roadway surface (Caltrans 2020).

Construction activities that produce vibration that can be felt by adjacent land uses include the use of vibratory equipment, large bulldozers, and pile drivers. The primary source of vibration during construction is usually from a bulldozer. A large bulldozer has a peak particle velocity of 0.089 inches per second (87 VdB) at 25 feet.

According to the Federal Railroad Administration Crossing Inventory Forms, there is one Metrolink line that carries freight and passenger trains that runs through the northeast portion of the City along Camino Capistrano. According to the Federal Railroad Administration Crossing Inventory Forms, there are 49 daytime and 17 nighttime trains that pass through the City each day at a maximum of 90 MPH. Existing buildings are about 80 feet from the centerline of the railway. Therefore, the expected maximum vibration at these buildings is 75 VdB (0.020 inches per second).

7.0 Future Noise Environment, Impacts, and Mitigation

This assessment analyzes future noise impacts to and from the proposed Project and compares the results to the City of Laguna Niguel's CEQA Manual. The analysis details the estimated noise levels associated with traffic from adjacent roadways and on-site stationary noise sources. Each future noise source related to the Project was evaluated in light of applicable City of Laguna Niguel CEQA Thresholds and General Plan policies and ordinances, and programmatic mitigation measures are provided as applicable.

7.1 Transportation Noise and Vibration

Transportation noise includes noise from aircraft, railways, and roadways. The Project Area is outside of any airport 65 dBA CNEL contours and therefore, there is no aircraft impact.

7.1.1 Railway Vibration

One rail line runs through the City of Laguna Niguel through Community Profile Area 4. The proposed Project could facilitate the construction of up to 1,495 residential attached units, 701,777 square feet of commercial uses, and up to 317 hotel rooms near or adjacent to the existing railroad. MD assumes the proposed uses will be as close as 75 feet to the railroad.

With regards to vibration impacts on new development near railroads, human disturbance is the primary concern. It is extremely rare for vibration levels from trains passing to result in structural damage to buildings. In addition, buses and other transit vehicles are not anticipated to generate excessive vibration levels that would disturb sensitive receptors because these vehicles are traveling at lower speeds and do not generate substantial vibrations. According to the City's CEQA Manual, vibration levels that are "distinctly perceptible" or worse are considered significant (see Table 11). Vibration levels of 0.25 PPV (inches per second) or 95.9 VdB would be considered "distinctly perceptible".

There are an estimated 49 daytime and 17 nighttime passenger trains that pass through the City each day at a maximum of 90 MPH, according to the Federal Railroad Administration Crossing Inventory. The FTA's guidance document contains generalized ground surface vibration curves derived from vibration measurements of transit systems in North America (FTA 2018, Figure 6-4). The locomotive-powered passenger curve assumes the passenger train is traveling at 50 mph. However, the U.S. Dot Crossing Inventory Form states that the train's maximum timetable speed is 90 mph. According to the equation provided in Table 6-11 in the FTA manual, there is a 5 VdB increase for a vehicle moving 90 mph compared to 50 mph. Based on these vibration prediction curves and the speed adjustment, the vibration levels will be 86 VdB at new developments approximately 75 feet away from the passenger rail line centerline and will not exceed the City's threshold of significance of 95.9 VdB. Therefore, future residential and commercial developments along the railway will not be exposed to excessive train vibration levels that exceed the threshold of significance of 95.9 VdB if the development is a minimum of 75 feet away from the railroad centerline, and the impact is less than significant.

7.1.2 Vehicle Traffic Noise

The primary noise source in the Project Area will continue to be vehicle traffic. Future traffic noise level contours are presented in Exhibits K and L. Tables 17 and 18 show the future noise levels at a distance of 50 feet from the centerline of studied roadways by the year 2045 for Current General Plan Buildout (No Project) and Proposed General Plan Buildout (With Project). The distances to the 55, 60, 65, and 70 dBA CNEL noise contours are also provided.

Table 17: 2045 Current General Plan Buildout Traffic Noise Levels (dBA, CNEL)

Roadway	Segment Limits	CNEL, dBA @50 ft	Distance to Contour (feet)			
			70 dBA	65 dBA	60 dBA	55 dBA
Pacific Park Drive	Alicia Parkway to La Paz Road	74.0	125	395	1251	3955
Alicia Parkway	Pacific Park Drive to Avila Road	73.7	117	371	1174	3714
La Paz Road	Pacific Park Drive to Avila Road	70.3	53	168	531	1679
Moulton Parkway	North of Avila Road	72.4	87	276	874	2763
Alicia Parkway	Avila Road to Aliso Creek Road	73.3	108	342	1081	3418
La Paz Road	Avila Road to Aliso Creek Road	70.1	52	164	517	1635
Moulton Parkway	Avila Road to Aliso Creek Road	72.9	97	307	971	3070
Aliso Creek Road	Alicia Parkway to La Paz Road	74.0	126	400	1264	3997
Aliso Creek Road	La Paz Road to Moulton Parkway	69.1	41	130	411	1299
Alicia Parkway	Aliso Creek Road to Highlands Avenue	75.5	176	555	1756	5553
La Paz Road	Aliso Creek Road to Rancho Niguel Road	69.0	40	126	399	1262
Moulton Parkway	Aliso Creek Road to Rancho Niguel Road	75.4	174	551	1743	5511
Rancho Niguel Road	Moulton Parkway to Greenfield Drive	66.6	23	73	230	726
Crown Valley Parkway	Greenfield Drive to Cabot Road	74.4	138	437	1383	4372
Crown Valley Parkway	Cabot Road to Forbes Road	77.9	312	986	3118	9859
Moulton Parkway	Rancho Niguel Road to Crown Valley Parkway	73.9	124	393	1241	3925
Crown Valley Parkway	Moulton Parkway/Golden Lantern to Greenfield Drive	75.0	157	497	1571	4967
Paseo de Colinas	Golden Lantern to Cabot Road	69.7	46	146	462	1461
Paseo de Colinas	Cabot Road and Camino Capistrano	69.3	42	133	421	1332
Alicia Parkway	Highlands Avenue to Niguel Road	75.6	180	571	1805	5707
Crown Valley Parkway	La Paz Road to Moulton Parkway/Golden Lantern	72.9	98	311	983	3108
Golden Lantern	Crown Valley Parkway to Paseo de Colinas	72.8	96	303	958	3031
Crown Valley Parkway	Niguel Road to La Paz Road	73.0	99	314	994	3143
Golden Lantern	Paseo de Colinas to Marina Hills Drive/Camino Los Padres	73.7	116	368	1163	3676
Crown Valley Parkway	Alicia Parkway to Club House Drive	73.8	120	380	1202	3801
Niguel Road	Crown Valley Parkway to Marina Hills Drive	69.6	45	143	453	1433
Pacific Island Drive	Club House Drive to Starview Lane	64.2	13	41	131	413
Niguel Road	Marina Hills Drive to Club House Drive	69.9	48	153	485	1533

Roadway	Segment Limits	CNEL, dBA @50 ft	Distance to Contour (feet)			
			70 dBA	65 dBA	60 dBA	55 dBA
Golden Lantern	Chapparosa Park Road to Beacon Hill Way	73.2	103	327	1034	3270
Crown Valley Parkway	Club House Drive to Pacific Island Drive/Camino Del Avion	74.1	128	406	1284	4061
Niguel Road	Ridgeway Avenue to Camino Del Avion	69.9	48	153	484	1531
Golden Lantern	Beacon Hill Way to Camino Del Avion	73.5	111	351	1109	3507
Camino Del Avion	Crown Valley Parkway to Niguel Road	67.9	31	99	312	986
Camino Del Avion	Niguel Road to Golden Lantern	69.8	48	152	480	1519

Notes:
1) Exterior noise levels calculated at 5 feet above ground.
2) Noise levels calculated from centerline of subject roadway.
3) Contour Distances do not take into account potential noise reduction from existing barriers such as buildings, walls, or berms as a worst-case scenario for planning screening purposes. Overall levels are likely lower at sensitive receptors.

Table 18: 2045 Proposed General Plan Buildout Traffic Noise Levels (dBA, CNEL)

Roadway	Segment Limits	CNEL, dBA @50 ft	Distance to Contour (feet)			
			70 dBA	65 dBA	60 dBA	55 dBA
Pacific Park Drive	Alicia Parkway to La Paz Road	73.7	118	372	1177	3723
Alicia Parkway	Pacific Park Drive to Avila Road	73.7	118	373	1179	3729
La Paz Road	Pacific Park Drive to Avila Road	69.9	49	155	490	1548
Moulton Parkway	North of Avila Road	72.6	91	287	909	2874
Alicia Parkway	Avila Road to Aliso Creek Road	73.4	110	347	1099	3474
La Paz Road	Avila Road to Aliso Creek Road	69.7	47	147	466	1473
Moulton Parkway	Avila Road to Aliso Creek Road	73.0	100	315	997	3153
Aliso Creek Road	Alicia Parkway to La Paz Road	73.1	102	321	1016	3212
Aliso Creek Road	La Paz Road to Moulton Parkway	68.8	38	121	381	1206
Alicia Parkway	Aliso Creek Road to Highlands Avenue	75.6	181	573	1813	5735
La Paz Road	Aliso Creek Road to Rancho Niguel Road	67.2	26	83	261	826
Moulton Parkway	Aliso Creek Road to Rancho Niguel Road	75.3	171	540	1709	5405
Rancho Niguel Road	Moulton Parkway to Greenfield Drive	66.8	24	75	237	749
Crown Valley Parkway	Greenfield Drive to Cabot Road	74.8	152	481	1522	4813
Crown Valley Parkway	Cabot Road to Forbes Road	78.2	330	1044	3300	10437
Moulton Parkway	Rancho Niguel Road to Crown Valley Parkway	73.6	114	359	1136	3593
Crown Valley Parkway	Moulton Parkway/Golden Lantern to Greenfield Drive	75.5	179	566	1790	5662
Paseo de Colinas	Golden Lantern to Cabot Road	70.9	62	196	619	1957
Paseo de Colinas	Cabot Road and Camino Capistrano	70.5	56	177	561	1773
Alicia Parkway	Highlands Avenue to Niguel Road	75.6	181	574	1814	5737
Crown Valley Parkway	La Paz Road to Moulton Parkway/Golden Lantern	73.5	111	351	1111	3514
Golden Lantern	Crown Valley Parkway to Paseo de Colinas	72.6	91	288	910	2877

Roadway	Segment Limits	CNEL, dBA @50 ft	Distance to Contour (feet)			
			70 dBA	65 dBA	60 dBA	55 dBA
Crown Valley Parkway	Niguel Road to La Paz Road	73.1	103	326	1031	3259
Golden Lantern	Paseo de Colinas to Marina Hills Drive/Camino Los Padres	74.4	138	436	1379	4361
Crown Valley Parkway	Alicia Parkway to Club House Drive	73.8	121	382	1206	3815
Niguel Road	Crown Valley Parkway to Marina Hills Drive	69.4	43	137	434	1371
Pacific Island Drive	Club House Drive to Starview Lane	64.2	13	41	131	413
Niguel Road	Marina Hills Drive to Club House Drive	70.1	52	163	516	1632
Golden Lantern	Chapparosa Park Road to Beacon Hill Way	72.6	91	288	912	2883
Crown Valley Parkway	Club House Drive to Pacific Island Drive/Camino Del Avion	74.2	133	420	1327	4197
Niguel Road	Ridgeway Avenue to Camino Del Avion	70.1	51	163	514	1626
Golden Lantern	Beacon Hill Way to Camino Del Avion	73.2	104	330	1044	3302
Camino Del Avion	Crown Valley Parkway to Niguel Road	68.3	34	107	340	1075
Camino Del Avion	Niguel Road to Golden Lantern	70.1	51	161	508	1607

Notes:

1) Exterior noise levels calculated at 5 feet above ground.
2) Noise levels calculated from centerline of subject roadway.
3) Contour Distances do not take into account potential noise reduction from existing barriers such as buildings, walls, or berms as a worst-case scenario for planning screening purposes. Overall levels are likely lower at sensitive receptors.

As shown in Tables 17 and 18 and Exhibits J, K, and L, by the year 2045, existing sensitive uses adjacent to the studied roadways will be exposed to noise levels that exceed the City's exterior standards of 65 dBA CNEL for sensitive uses. According to the City's CEQA Manual, a significant impact would occur if the Project resulted in any of the following:

- The project causes ambient exterior noise levels at nearby noise-sensitive uses to increase above the City's exterior noise standards in Table 8 (i.e., 65 dB CNEL for residential land uses); or

- Baseline noise levels at nearest noise-sensitive land uses without the project are below 55 dBA CNEL and the project results in noise level increases of 10 dBA CNEL or more in ambient noise levels; or

- Baseline noise levels at nearest noise-sensitive land uses without the project are in the range of 55-60 dBA CNEL and the project results in ambient noise levels that are 5 dBA CNEL or more above baseline noise levels; or

- Baseline noise levels at nearest noise-sensitive land uses without the project are above 60 dBA CNEL and the project results in a noise level increase of 3 dBA CNEL or more above baseline noise levels.

Compared to existing traffic noise levels, 2045 without Project traffic volumes are expected to be up to 1.7 dBA CNEL louder than existing ambient noise levels at existing land uses and will result in inaudible increases in ambient noise along the analyzed roadways (see Table 19).

Compared to existing traffic noise levels, 2045 with Project traffic volumes are expected to be up to 1.6 dBA CNEL louder than existing ambient noise levels at existing land uses and will result in inaudible increases in ambient noise. At 50 feet from the centerline, only one roadway is below 65 dBA CNEL (Pacific Island Drive from Club House Drive to Starview Lane), and the Project will not cause the existing noise level to exceed 65 dBA CNEL. Thus, implementation of the Project will result in a less than significant impact to roadway noise levels.

Table 19: Change in Noise Along Roadways (dBA, CNEL @ 50')

Roadway	Segment	Existing	2045 No Project		2045 With Project	
		CNEL @ 50' dBA[3]	CNEL @ 50' dBA	Change in Noise Level	CNEL @ 50' dBA	Change in Noise Level
Pacific Park Drive	Alicia Parkway to La Paz Road	72.8	74.0	1.2	73.7	0.9
Alicia Parkway	Pacific Park Drive to Avila Road	73.7	73.7	0.0	73.7	0.0
La Paz Road	Pacific Park Drive to Avila Road	69.6	70.3	0.7	69.9	0.3
Moulton Parkway	North of Avila Road	72.0	72.4	0.4	72.6	0.6
Alicia Parkway	Avila Road to Aliso Creek Road	73.4	73.3	-0.1	73.4	0.0
La Paz Road	Avila Road to Aliso Creek Road	70.0	70.1	0.1	69.7	-0.3
Moulton Parkway	Avila Road to Aliso Creek Road	72.4	72.9	0.5	73.0	0.6
Aliso Creek Road	Alicia Parkway to La Paz Road	72.5	74.0	1.5	73.1	0.6
Aliso Creek Road	La Paz Road to Moulton Parkway	67.4	69.1	1.7	68.8	1.4
Alicia Parkway	Aliso Creek Road to Highlands Avenue	75.3	75.5	0.2	75.6	0.3
La Paz Road	Aliso Creek Road to Rancho Niguel Road	68.5	69.0	0.5	67.2	-1.3
Moulton Parkway	Aliso Creek Road to Rancho Niguel Road	74.3	75.4	1.1	75.3	1.0
Rancho Niguel Road	Moulton Parkway to Greenfield Drive	66.4	66.6	0.2	66.8	0.4
Crown Valley Parkway	Greenfield Drive to Cabot Road	74.6	74.4	-0.2	74.8	0.2
Crown Valley Parkway	Cabot Road to Forbes Road	78.1	77.9	-0.2	78.2	0.1
Moulton Parkway	Rancho Niguel Road to Crown Valley Parkway	72.5	73.9	1.4	73.6	1.1
Crown Valley Parkway	Moulton Parkway/Golden Lantern to Greenfield Drive	75.4	75.0	-0.4	75.5	0.1
Paseo de Colinas	Golden Lantern to Cabot Road	70.3	69.7	-0.6	70.9	0.6
Paseo de Colinas	Cabot Road and Camino Capistrano	68.9	69.3	0.4	70.5	1.6
Alicia Parkway	Highlands Avenue to Niguel Road	75.5	75.6	0.1	75.6	0.1
Crown Valley Parkway	La Paz Road to Moulton Parkway/Golden Lantern	73.1	72.9	-0.2	73.5	0.4
Golden Lantern	Crown Valley Parkway to Paseo de Colinas	71.9	72.8	0.9	72.6	0.7
Crown Valley Parkway	Niguel Road to La Paz Road	73.0	73.0	0.0	73.1	0.1
Golden Lantern	Paseo de Colinas to Marina Hills Drive/Camino Los Padres	74.0	73.7	-0.3	74.4	0.4
Crown Valley Parkway	Alicia Parkway to Club House Drive	73.4	73.8	0.4	73.8	0.4
Niguel Road	Crown Valley Parkway to Marina Hills Drive	69.4	69.6	0.2	69.4	0.0
Pacific Island Drive	Club House Drive to Starview Lane	64.0	64.2	0.2	64.2	0.2

Roadway	Segment	Existing	2045 No Project		2045 With Project	
		CNEL @ 50' dBA[3]	CNEL @ 50' dBA	Change in Noise Level	CNEL @ 50' dBA	Change in Noise Level
Niguel Road	Marina Hills Drive to Club House Drive	70.1	69.9	-0.2	70.1	0.0
Golden Lantern	Chapparosa Park Road to Beacon Hill Way	71.9	73.2	1.3	72.6	0.7
Crown Valley Parkway	Club House Drive to Pacific Island Drive/Camino Del Avion	74.1	74.1	0.0	74.2	0.1
Niguel Road	Ridgeway Avenue to Camino Del Avion	70.1	69.9	-0.2	70.1	0.0
Golden Lantern	Beacon Hill Way to Camino Del Avion	72.5	73.5	1.0	73.2	0.7
Camino Del Avion	Crown Valley Parkway to Niguel Road	68.0	67.9	-0.1	68.3	0.3
Camino Del Avion	Niguel Road to Golden Lantern	69.7	69.8	0.1	70.1	0.4

Notes:
1) Existing and Future traffic volumes compiled by Linscott, Law & Greenspan, Engineers, 2025.

Exhibit K

2045 No Project Noise Contours (CNEL)

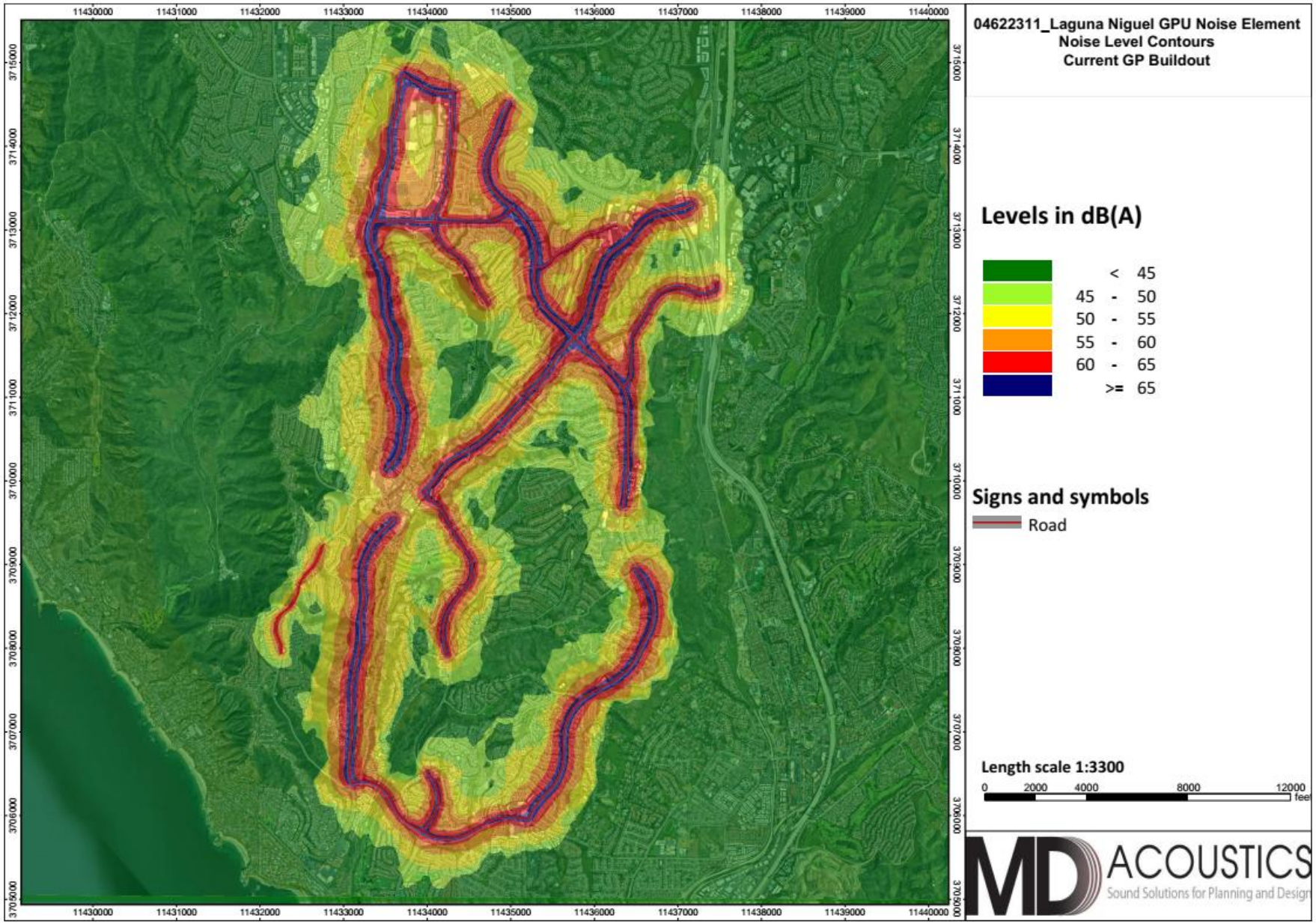
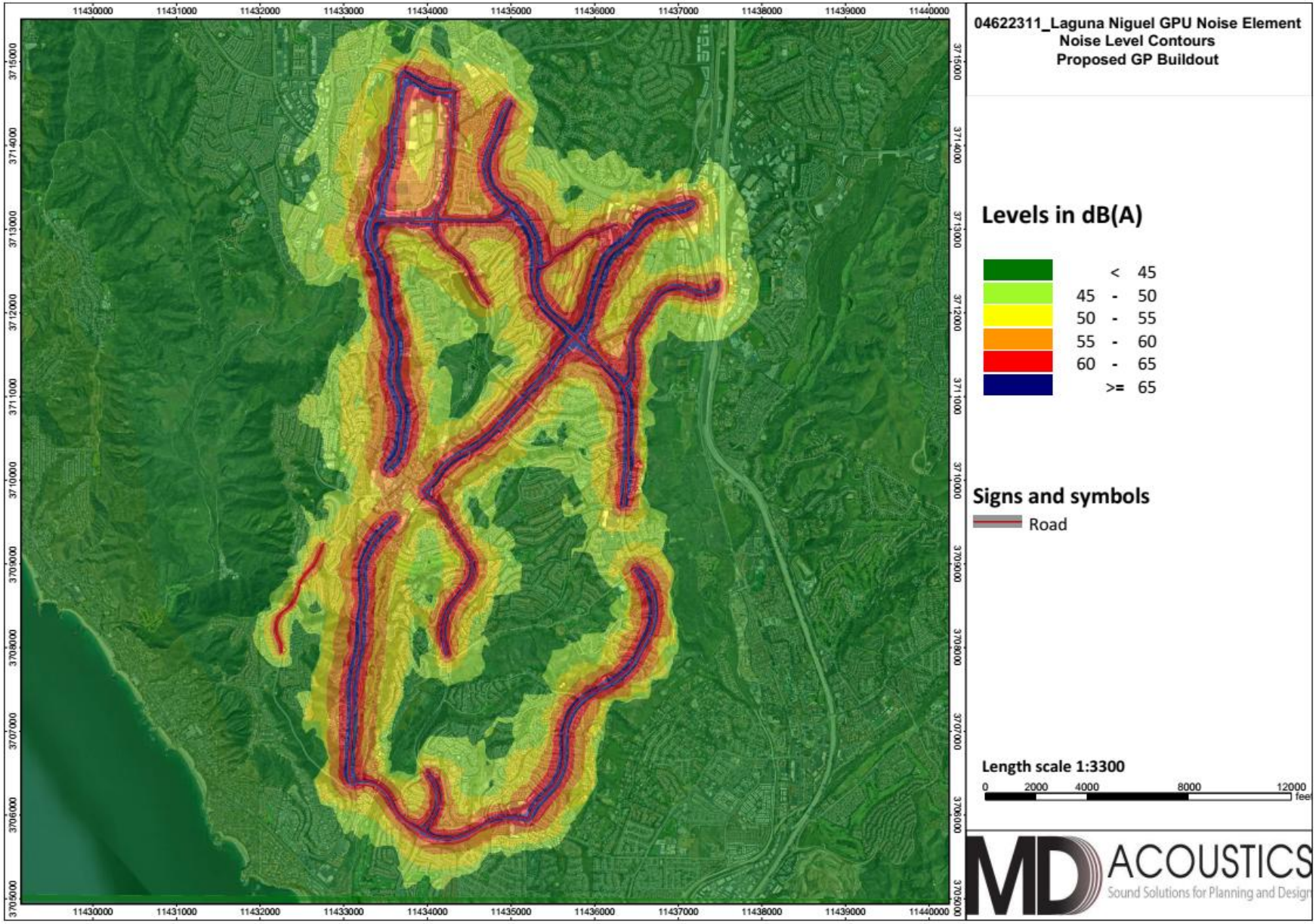


Exhibit L

2045 With Project Noise Contours (CNEL)



Where proposed land uses are expected to be exposed to noise levels that exceed the land use compatibility criteria in Table 8, impacts can be mitigated to a level that is less than significant with the implementation of noise control measures, such as relocating residential outdoor recreational areas away from 65 dBA CNEL or greater areas or shielding outdoor areas using noise barriers. For residential developments, a noise study must ensure that interior levels in livable areas do not exceed 45 dBA CNEL. The impact is less than significant with the implementation of the General Plan and CEQA Manual guidelines.

7.2 Stationary Noise

Implementation of the Project could result in the future development of land uses that generate noise levels in excess of applicable City noise standards for non-transportation noise sources as outlined in Section 4.3.3. While the Project does not explicitly propose any new noise-generating uses, Project implementation would allow for the development of mixed uses, increased residential development at higher densities, and new commercial development, which may result in new noise sources. Specific development projects and the details of future noise-generating land uses that may be located in the Project Area in the future are not known at this time. Additionally, noise from existing stationary sources, as identified in the Existing Settings Section, would continue to impact noise-sensitive land uses in the vicinity of the noise sources.

While no specific projects are proposed under the Project, changes in land use may allow for more intensive noise-generating uses in closer proximity to noise-sensitive uses. A noise impact study is required for projects that would introduce stationary noise audible beyond the property line of the project site and/or include 75 or more dwelling units, 100,000 square feet or greater of nonresidential development, or have the potential to generate 1,000 or more average daily vehicle trips. The City's noise standard for residential uses is 55 dBA Leq between 7 AM to 10 PM and 50 dBA Leq between 10 PM to 7 AM. A significant impact would occur if noise levels on any residential property exceed:

1. The noise standard for a cumulative period of more than 30 minutes in any hour;

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

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

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

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

Where this occurs, detailed noise studies would be required to ensure that noise control measures are implemented into the project design. Such measures could include the redesign of stationary noise sources away from sensitive uses, construction of sound walls or berms between noise generating uses and sensitive uses, using buildings to create additional buffer distance and screening, or other site design measures to ensure that non-transportation (stationary) noise sources do not cause exterior and interior

noise levels to exceed allowable standards at sensitive receptors. The impact is less than significant with the implementation of the Municipal Code, the City's CEQA Manual, and NOI-2.

NOI-2 As part of the development review process for qualifying projects, the Laguna Niguel Community Development Department shall determine if an operational noise assessment is required, based on the screening criteria provided in the City of Laguna Niguel CEQA Manual. For projects with the potential to result in significant operational-related noise impacts, applicants shall retain a qualified environmental professional to prepare an operational noise assessment.

The operational noise assessment shall be prepared in accordance with the methodologies, standards, and significance thresholds in the City's CEQA Manual and submitted for review and approval by the Laguna Niguel Community Development Department. The assessment shall include representative noise measurements, estimates of existing and projected noise levels, and BMPs, if necessary, to ensure compliance with the City's noise standards. BMPs may include, but are not limited to, noise barriers, setbacks, site design, building facades, use of noise-minimizing materials such as rubberized asphalt, and equipment shielding and maintenance.

7.3 Interior Noise

Interior noise levels at future land uses exposed to exterior noise levels exceeding 65 dBA CNEL may exceed the City's interior noise standard of 45 dBA CNEL without mitigation.

Based on the data provided in the Environmental Protection Agency's (EPA) Protective Noise Levels (EPA 550/9-79-100, Nov 1979), standard homes in Southern California provide at least 12 dBA of noise exterior to interior noise attenuation with windows open and 20 dBA with windows closed. Therefore, residences would need to be exposed to exterior noise levels exceeding 65 dBA CNEL (45 dBA + 20 dBA = 65 dBA) to potentially exceed the interior noise standard of 45 dBA CNEL with windows closed. A windows closed condition is defined as the interior noise level with the windows closed. Upgrades are required for residential structures that would experience interior noise levels exceeding the 45 dBA CNEL noise standard when windows are closed (e.g., higher grade of insulation in outdoor walls and/or double-paned windows and air condition units).

7.4 Construction Noise

The degree of construction noise may vary for different projects within the scope of the proposed Project and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction. Construction must not occur between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or any time on Sunday or a Federal holiday per Section 6-6-7(5) of the Laguna Niguel Municipal Code. Construction noise is exempt from the noise ordinance outside of those times.

The Environmental Protection Agency (EPA) has compiled data regarding the noise-generated characteristics of typical construction activities. This data was used to determine the noise level of equipment stated in the FTA Noise and Vibration Manual and the FHWA Roadway Construction Noise Model. The data is presented in Table 20. These noise levels would diminish rapidly with distance from

the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured 50 feet from the noise source would reduce to 80 dBA at 100 feet. At 200 feet from the noise source, the noise level would reduce to 74 dBA. At 400 feet, the noise source would reduce by another 6 dBA to 68 dBA.

Table 20: Typical Construction Noise Levels

Equipment Powered by Internal Combustion Engines	
Type	**Noise Levels (dBA) at 50 Feet**
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86
Impact Equipment	
Saws	71 - 82
Vibrators	68 - 82
Notes: Source: Reference Noise Levels from the Environmental Protection Agency (EPA)	

7.4.1 Construction Related Traffic

Individual projects within the scope of the Project would result in short-term noise impacts associated with construction activities. Two types of short-term noise impacts could occur during construction activities. First, construction crew commute and the transport of construction equipment and materials to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. Truck traffic associated with project construction should be limited to within the permitted construction hours, as listed in the City's Municipal Code Section 6-6-7(5). Although there would be a relatively high single-event noise exposure potential at a maximum of 87 dBA Lmax at 50 ft from passing trucks, causing possible short-term intermittent annoyances, the effect on ambient noise levels would be less than 1 dBA when averaged over one hour or 24 hours. In other words, the changes in noise levels over 1 hour or 24 hours attributable to passing trucks would not be perceptible to the normal human ear. The impact is less than significant with the implementation of Section 6-6-7(5) of the Municipal Code.

7.4.2 On-Site Construction Activities

Site preparation phase, which includes grading and paving, tends to generate the highest noise levels since the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Site-specific construction activities associated with future development is expected to require the use of scrapers, bulldozers, motor graders, and water and pickup trucks. The maximum noise level generated by each scraper is assumed to be approximately 87 dBA Lmax at 50 ft from the scraper in operation. Each bulldozer would also generate approximately 85 dBA Lmax at 50 ft. The maximum noise level generated by the sound sources with equal strength increases the noise level by 3 dBA. Noise reduction potential will be project and site-specific. Potential impacts would be site-specific, depending on the equipment used and distances to sensitive receptors. A noise study is required if construction is anticipated to occur within 500 feet of a noise-sensitive use, or if construction will occur outside of the allowable hours. The impact is less than significant with the implementation of Section 6-6-7(5) of the Municipal Code, the City's CEQA Manual, and mitigation measure NOI-1.

Mitigation Measure to Reduce Impacts Related to Construction Generated Noise

NOI-1 Applicants part of the development review process for qualifying projects, the Laguna Niguel Community Development Department shall determine if a construction noise assessment is required, based on the screening criteria provided in the City of Laguna Niguel CEQA Manual. For projects with the potential to result in significant construction-related noise impacts, applicants shall retain a qualified environmental professional to prepare a construction noise assessment.

The construction noise assessment shall be prepared in accordance with the methodologies, standards, and significance thresholds in the City's CEQA Manual and submitted for review and approval by the Laguna Niguel Community Development Department. This includes an analysis of potential construction noise impacts on noise-sensitive land uses and includes representative noise measurements, estimates of existing and projected noise levels, and Best Management Practices (BMPs), if necessary, to ensure compliance with the City's noise standards. Potential BMPs may include locating stationary noise sources as far from adjacent properties as possible, limiting construction hours, restricting delivery times, installing temporary noise barriers and/or other BMPs determined effective to minimize construction noise emissions.

7.4 Ground-borne Vibration

The main sources of vibration in the project area are related to vehicles and construction. Typical roadway traffic, including heavy trucks, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage. However, there have been cases in which heavy trucks traveling over Construction noise would be an impact if construction occurred outside of the hours outlined in Section 6-6-7(5) of the Laguna Niguel Municipal Code, or if construction noise levels exceed 80 dBA Leq 8 hour. potholes or other discontinuities in the pavement have caused vibration high enough to result in

complaints from nearby residents. These types of issues typically can be resolved by smoothing the roadway surface (Caltrans 2020).

7.4.1 On-Site Construction Activities

Construction activities that produce vibration that can be felt by adjacent land uses include the use of vibratory equipment, large bulldozers, and pile drivers. The primary sources of vibration during construction are usually vibratory rollers and large bulldozers. As shown in Table 21, a vibratory roller has a peak particle velocity (inches/second) of 0.21, and a large bulldozer has a peak particle velocity of 0.089 (inches per second) at 25 feet. The use of pile driving equipment can generate a peak particle velocity of 1.5 (inches per second), depending on the size and model.

Table 21: Vibration Source Levels for Construction Equipment

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

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

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations which is used as a significance threshold for construction vibration in the City's CEQA Manual (California Department of Transportation, 2013). Table 10 provides maximum PPV levels (inches/second) to be used to determine if ground-borne vibration may result in damage, depending on the type of structure, and Table 11 provides the potential annoyance criteria for PPV levels (see Section 4.3.3 of this report).

When evaluated in light of the estimated ground-borne vibration levels presented in Tables 10 and 11, it can be determined that construction activities in the Project area have the potential to result in significant impacts related to ground-borne vibration associated with construction activities. As shown in Table 10, a peak particle velocity (PPV) of 0.20 is the threshold at which there is a risk of "architectural"

damage to normal dwellings. As shown in Table 11, a peak particle velocity (PPV) of 0.04 is considered "distinctly perceptible" and is considered significant. Thus, impacts may be significant if construction activities result in ground-borne vibration of 0.20 or higher at adjacent buildings, or if construction activities result in ground-borne vibration 0f 0.04 or higher at sensitive uses. The impact is less than significant with the implementation of NOI-3.

Mitigation Measure to Reduce Impacts Related to Construction Generated Ground-borne Vibration

NOI-3 Prior to issuance of a grading permit, applicants of qualifying development projects shall have a construction vibration assessment prepared by a qualified environmental professional in accordance with the methodologies, standards, and significance thresholds in the City of Laguna Niguel CEQA Manual and submitted for review and approval by the Laguna Niguel Community Development Department. The assessment shall include a detailed plan to avoid potential significant impacts to existing buildings due to groundborne vibrations. If necessary, the plan shall identify and incorporate Best Management Practices (BMPs) to ensure consistency with the City's CEQA Manual criteria. BMPs may include, but are not limited to, pre-construction surveys, vibration monitoring, equipment selection and placement, alternative construction methods, open trenches, and installing vibration isolators based on California Department of Transportation's Construction Vibration Guidance Manual and/or other BMPs determined effective to minimize construction vibration impacts.

8.0 CEQA Analysis

The City's CEQA Manual establishes thresholds for noise impact analysis as presented in Section 4.3.3 of this report. The following summarizes the Project's impact in light of the CEQA Manual guidelines.

Operational Noise

The following defines the operational noise screening criteria for a new project:

- Would the proposed project introduce a stationary noise source audible beyond the property line of the project site?

- Would the project include 75 or more dwelling units, 100,000 square feet or greater of nonresidential development, or have the potential to generate 1,000 or more average daily vehicle trips?

Implementation of the Project will result in an increase in average daily vehicle trips. Additionally, while the Project does not explicitly propose any new noise-generating uses, Project implementation would allow for the development of mixed uses, increased residential development at higher densities, and new commercial development, which may result in new noise sources. Thus, the following analyzes the Project noise impact in light of the City's CEQA thresholds of significance.

Mobile Noise

A significant impact would occur if the Project resulted in any of the following:

- The project causes ambient exterior noise levels at nearby noise-sensitive uses to increase above the City's exterior noise standards in Table 8 (i.e., 65 dB CNEL for residential land uses); or

- Baseline noise levels at nearest noise-sensitive land uses without the project are below 55 dBA CNEL and the project results in noise level increases of 10 dBA CNEL or more in ambient noise levels; or

- Baseline noise levels at nearest noise-sensitive land uses without the project are in the range of 55-60 dBA CNEL and the project results in ambient noise levels that are 5 dBA CNEL or more above baseline noise levels; or

- Baseline noise levels at nearest noise-sensitive land uses without the project are above 60 dBA CNEL and the project results in a noise level increase of 3 dBA CNEL or more above baseline noise levels.

Compared to existing traffic noise levels, the Proposed General Plan Buildout 2045 traffic volumes are expected to be up to 1.6 dBA CNEL louder than existing ambient noise levels at existing land uses and will result in inaudible increases in ambient noise. At 50 feet from the centerline, only one roadway is below 65 dBA CNEL (Pacific Island Drive from Club House Drive to Starview Lane), and the Project will

not cause the existing noise level to exceed 65 dBA CNEL. Thus, implementation of the Project will result in a less than significant impact to roadway noise levels.

Implementation of the proposed Project will result in less than significant impacts related to exceedances of the land use noise standards (see Table 8). Where existing land uses will be impacted, the impact would be less than significant.

Where proposed land uses are expected to be exposed to noise levels that exceed the land use noise standards in Table 5, impacts can be mitigated to a level that is less than significant with the implementation of noise control measures, such as relocating residential outdoor recreational areas away from 65 dBA CNEL or greater areas or shielding outdoor areas using noise barriers. For residential developments, the study must ensure that interior levels in livable areas do not exceed 45 dBA CNEL.

Stationary Noise

Implementation of the Project may result in stationary noise impacts from future uses. Implementation of good land use planning and policies and actions can minimize noise impacts related to these sources by avoiding the placement of noise generating equipment near noise-sensitive land uses and where unavoidable, include design measures to the degree practical to avoid violating the noise criteria presented in Section 4.3.3.

Stationary noise will be significant if it exceeds the levels outlined in the Laguna Niguel Municipal Code (55 dBA Leq during daytime hours and 50 dBA Leq during nighttime hours), or if noise levels on any residential property exceed:

1. The noise standard for a cumulative period of more than 30 minutes in any hour;

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

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

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

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

Where this occurs, detailed noise studies would be required to ensure that noise control measures are implemented into the project design. Such measures could include the redesign of stationary noise sources away from sensitive uses, construction of sound walls or berms between noise generating uses and sensitive uses, using buildings to create additional buffer distance and screening, or other site design measures to ensure that non-transportation (stationary) noise sources do not cause exterior and interior noise levels to exceed allowable standards at sensitive receptors. The impact is less than significant with the implementation of the Municipal Code, the City's CEQA Manual, and NOI-2.

NOI-2 As part of the development review process for qualifying projects, the Laguna Niguel Community Development Department shall determine if an operational noise assessment is required, based on the screening criteria provided in the City of Laguna Niguel CEQA Manual. For projects with the potential to result in significant operational-related noise impacts, applicants shall retain a qualified environmental professional to prepare an operational noise assessment.

The operational noise assessment shall be prepared in accordance with the methodologies, standards, and significance thresholds in the City's CEQA Manual and submitted for review and approval by the Laguna Niguel Community Development Department. The assessment shall include representative noise measurements, estimates of existing and projected noise levels, and BMPs, if necessary, to ensure compliance with the City's noise standards. BMPs may include, but are not limited to, noise barriers, setbacks, site design, building facades, use of noise-minimizing materials such as rubberized asphalt, and equipment shielding and maintenance.

Construction Noise

Construction noise would be an impact if construction occurred outside of the hours outlined in Section 6-6-7(5) of the Laguna Niguel Municipal Code, or if construction noise levels exceed 80 dBA Leq 8 hour. The potential impact is site-specific and depends on the construction equipment used and distance to adjacent sensitive receptors. Implementation of the proposed Project could result in short-term noise impacts associated with construction activities.

The site preparation phase of on-site construction activities, which includes grading and paving, tends to generate the highest noise levels since the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Site-specific construction activities associated with future development are expected to require the use of scrapers, bulldozers, motor graders, and water and pickup trucks. The maximum noise level generated by each scraper is assumed to be approximately 87 dBA Lmax at 50 ft from the scraper in operation. Each bulldozer would also generate approximately 85 dBA Lmax at 50 ft. The maximum noise level generated by the sound sources with equal strength increases the noise level by 3 dBA. Noise reduction potential will be project and site-specific. The impact is less than significant with the implementation of Section 6-6-7(5) of the Municipal Code, the City's CEQA Manual, and mitigation measure NOI-1.

Mitigation Measure to Reduce Impacts Related to Construction Generated Noise

NOI-1 As part of the development review process for qualifying projects, the Laguna Niguel Community Development Department shall determine if a construction noise assessment is required, based on the screening criteria provided in the City of Laguna Niguel CEQA Manual. For projects with

the potential to result in significant construction-related noise impacts, applicants shall retain a qualified environmental professional to prepare a construction noise assessment.

The construction noise assessment shall be prepared in accordance with the methodologies, standards, and significance thresholds in the City's CEQA Manual and submitted for review and approval by the Laguna Niguel Community Development Department. This includes an analysis of potential construction noise impacts on noise-sensitive land uses and includes representative noise measurements, estimates of existing and projected noise levels, and Best Management Practices (BMPs), if necessary, to ensure compliance with the City's noise standards. Potential BMPs may include locating stationary noise sources as far from adjacent properties as possible, limiting construction hours, restricting delivery times, installing temporary noise barriers and/or other BMPs determined effective to minimize construction noise emissions.

Construction crew commute and the transport of construction equipment and materials to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. Truck traffic associated with project construction should be limited to within the permitted construction hours, as listed in the City's Municipal Code. Although there would be a relatively high single-event noise exposure potential at a maximum of 87 dBA Lmax at 50 ft from passing trucks, causing possible short-term intermittent annoyances, the effect on ambient noise levels would be less than 1 dBA when averaged over one hour or 24 hours. In other words, the changes in noise levels over 1 hour or 24 hours attributable to passing trucks would not be perceptible to the normal human ear. Therefore, short-term construction-related impacts associated with worker commute and equipment transport on local streets leading to the project site would result in a less than significant impact on noise-sensitive receptors along the access routes. No mitigation is required.

Vibration

The main sources of vibration in the Project Area are related to vehicles, construction, and railway. The Project would be considered significant if it resulted in vibration levels above the threshold of damage at adjacent buildings, or if it resulted in vibration levels above the "distinctly perceptible" threshold at sensitive-uses.

There are an estimated 49 daytime and 17 nighttime passenger trains that pass through the City each day at a maximum of 90 MPH, according to the Federal Railroad Administration Crossing Inventory. The Project may result in the development of residential uses within 75 feet of the railway. Vibration levels of 0.25 PPV (inches per second) or 95.9 VdB would be considered "distinctly perceptible" for transient sources. The vibration levels will be 86 VdB at new developments approximately 75 feet away from the passenger rail line centerline and will not exceed the City's threshold of significance of 95.9 VdB. Therefore, future residential and commercial developments along the railway will not be exposed to excessive train vibration levels that exceed the threshold of significance of 95.9 VdB if the development is a minimum of 75 feet away from the railroad centerline, and the impact is less than significant.

Construction activities in the Project area have the potential to result in significant impacts related to ground-borne vibration associated with construction activities. A peak particle velocity (PPV) of 0.20 is the threshold at which there is a risk of "architectural" damage to normal dwellings for continuous sources, and peak particle velocity (PPV) of 0.04 is considered "distinctly perceptible" and is considered significant. Thus, impacts may be significant if construction activities result in ground-borne vibration of 0.20 or higher at adjacent buildings, or if construction activities result in ground-borne vibration 0f 0.04 or higher at sensitive uses. The impact is less than significant with the implementation of NOI-3.

Mitigation Measure to Reduce Impacts Related to Construction Generated Ground-borne Vibration

NOI-3 Prior to issuance of a grading permit, applicants of qualifying development projects shall have a construction vibration assessment prepared by a qualified environmental professional in accordance with the methodologies, standards, and significance thresholds in the City of Laguna Niguel CEQA Manual and submitted for review and approval by the Laguna Niguel Community Development Department. The assessment shall include a detailed plan to avoid potential significant impacts to existing buildings due to groundborne vibrations. If necessary, the plan shall identify and incorporate Best Management Practices (BMPs) to ensure consistency with the City's CEQA Manual criteria. BMPs may include, but are not limited to, pre-construction surveys, vibration monitoring, equipment selection and placement, alternative construction methods, open trenches, and installing vibration isolators based on California Department of Transportation's Construction Vibration Guidance Manual and/or other BMPs determined effective to minimize construction vibration impacts.

9.0 References

American National Standards Institute (ANSI)

Specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

California, State of, Building Standards Commission

2019 California Uniform Building Code (UBC), Title 24.
2019 Green Code Section 5.507.4.3 (2019)

California Department of Transportation (Caltrans)

2013 Technical Noise Supplement to the Traffic Noise Analysis Protocol.
2020 Transportation and Construction Vibration Guidance Manual. April.
2021 Caltrans Traffic Counts https://dot.ca.gov/programs/traffic-operations/census

California Office of Noise Control

2017 Guidelines for the Preparation and Content of Noise Elements of the General Plan. February.

Environmental Protection Agency (EPA)

1974 Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Prepared by the EPA, Office of Noise Abatement and Control.

Federal Interagency Committee on Noise

1992 Federal Agency Review of Selected Airport Noise Analysis Issues. August.

Federal Transit Administration

2006 Transit Noise and Vibration Impact Assessment. Typical Construction Equipment Vibration Emissions. FTAVA-90-1003-06.

Laguna Niguel, City of

1992 General Plan.
City of Laguna Niguel Municipal Code.

Office of Planning and Research, State of California

2017 Office of Planning and Research, General Plan Guidelines.

Appendix A:
SoundPLAN Data

#	ROADWAY	SEGMENT	EXISTING ADT	CURRENT GP BUILDOUT ADT	PROPOSED GP BUILDOUT ADT	SPEED LIMIT	NL/FL DISTANCE
A	Pacific Park Drive	Alicia Parkway to La Paz Road	25800	34100	32100	45	72
B	Alicia Parkway	Pacific Park Drive to Avila Road	24400	24600	24700	50	72
C	La Paz Road	Pacific Park Drive to Avila Road	16400	19300	17800	40	72
D	Moulton Parkway	North of Avila Road	17900	19800	20600	50	66
E	Alicia Parkway	Avila Road to Aliso Creek Road	24700	24500	24900	50	66
F	La Paz Road	Avila Road to Aliso Creek Road	13600	14100	12700	45	72
G	Moulton Parkway	Avila Road to Aliso Creek Road	19800	22000	22600	50	66
H	Aliso Creek Road	Alicia Parkway to La Paz Road	19100	27000	21700	45	84
I	Aliso Creek Road	La Paz Road to Moulton Parkway	12100	18100	16800	40	54
J	Alicia Parkway	Aliso Creek Road to Highlands Avenue	38600	39800	41100	50	66
K	La Paz Road	Aliso Creek Road to Rancho Niguel Road	12300	13900	9100	45	46
L	Moulton Parkway	Aliso Creek Road to Rancho Niguel Road	28400	36500	35800	50	72
M	Rancho Niguel Road	Moulton Parkway to Greenfield Drive	15200	16000	16500	35	24
N	Crown Valley Parkway	Greenfield Drive to Cabot Road	39200	37700	41500	45	72
O	Crown Valley Parkway	Cabot Road to Forbes Road	58500	56300	59600	40	94
P	Moulton Parkway	Rancho Niguel Road to Crown Valley Parkway	18500	26000	23800	50	72
Q	Crown Valley Parkway	Moulton Parkway/Golden Lantern to Greenfield Drive	36200	32900	37500	50	72
R	Paseo de Colinas	Golden Lantern to Cabot Road	18600	15900	21300	45	48
S	Paseo de Colinas	Cabot Road and Camino Capistrano	13500	14500	19300	45	48
T	Alicia Parkway	Highlands Avenue to Niguel Road	37000	37800	38000	50	72
U	Crown Valley Parkway	La Paz Road to Moulton Parkway/Golden Lantern	27700	26800	30300	45	72
V	Golden Lantern	Crown Valley Parkway to Paseo de Colinas	22400	27600	26200	45	68
W	Crown Valley Parkway	Niguel Road to La Paz Road	27500	27100	28100	45	72
X	Golden Lantern	Paseo de Colinas to Marina Hills Drive/Camino Los Padres	34300	31700	37600	45	72
Y	Crown Valley Parkway	Alicia Parkway to Club House Drive	23400	25900	26000	50	70
Z	Niguel Road	Crown Valley Parkway to Marina Hills Drive	19900	20800	19900	40	48
AA	Pacific Island Drive	Club House Drive to Starview Lane	4300	4500	4500	45	48
BB	Niguel Road	Marina Hills Drive to Club House Drive	13100	12300	13100	50	54
CC	Golden Lantern	Chapparosa Park Road to Beacon Hill Way	20400	27000	23800	50	50
DD	Crown Valley Parkway	Club House Drive to Pacific Island Drive/Camino Del Avion	26900	26900	27800	50	72
EE	Niguel Road	Ridgeway Avenue to Camino Del Avion	13500	12800	13600	50	48
FF	Golden Lantern	Beacon Hill Way to Camino Del Avion	19100	23900	22500	50	70
GG	Camino Del Avion	Crown Valley Parkway to Niguel Road	11200	11100	12100	45	42
HH	Camino Del Avion	Niguel Road to Golden Lantern	16500	17100	18100	45	42

Appendix B:

Noise Measurement Data and Field Sheets

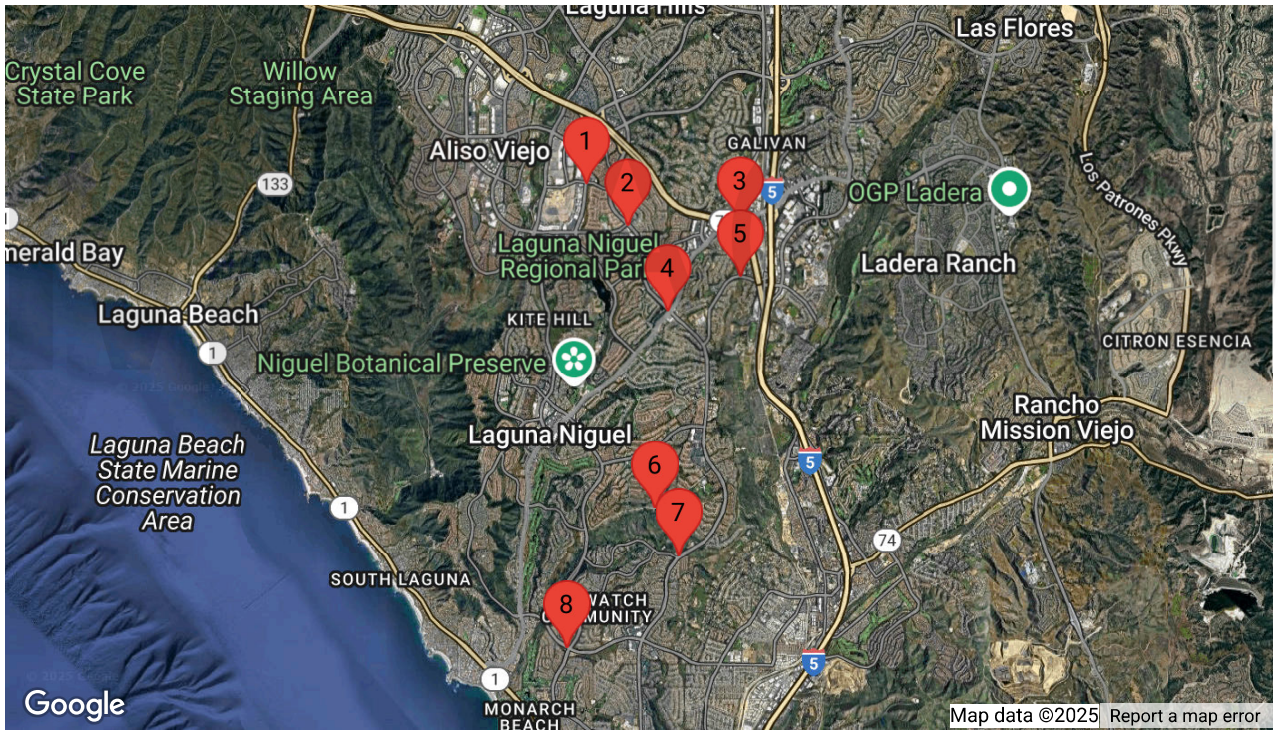
15-Minute Continuous Noise Measurement Datasheet - ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

Project Name:	Laguna Niguel GPU Noise
Project: #/Name:	0462-2023-011
Site Address/Location:	Laguna Niguel, CA
Date:	02/19/2025
Field Tech/Engineer:	Jason Schuyler / Rachel Edelman

Site Observations:

The primary Noise source is traffic at every location. Temps in the low 70's F winds 1-3MPH sunny.

Sound Meter:	XL2, NTI	**SN:**	A2A-07095-E0
Settings:	A-weighted, slow, 1-sec, 15-minute interval		
Site Id:	ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8		



STICS

MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

Project Name:	Laguna Niguel GPU Noise	**Calibrator:**	Cal 200
Site Address/Location:	Laguna Niguel, CA	**Cal Check: Pre-test:**	.05 **Post Test:** 0
Site Id:	ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8		

Figure 1: ST1



Figure 2: ST2



Figure 3: ST3



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

Project Name: Laguna Niguel GPU Noise

Site Address/Location: Laguna Niguel, CA

Site Id: ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

Figure 4: ST4



Figure 5: ST5



Figure 6: ST6



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

Project Name: Laguna Niguel GPU Noise

Site Address/Location: Laguna Niguel, CA

Site Id: ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

Figure 7: ST7



Figure 8: ST8



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

Project Name: Laguna Niguel GPU Noise

Site Address/Location: Laguna Niguel, CA

Site Id: ST1, ST2, ST3, ST4, ST5, ST6, ST7, ST8

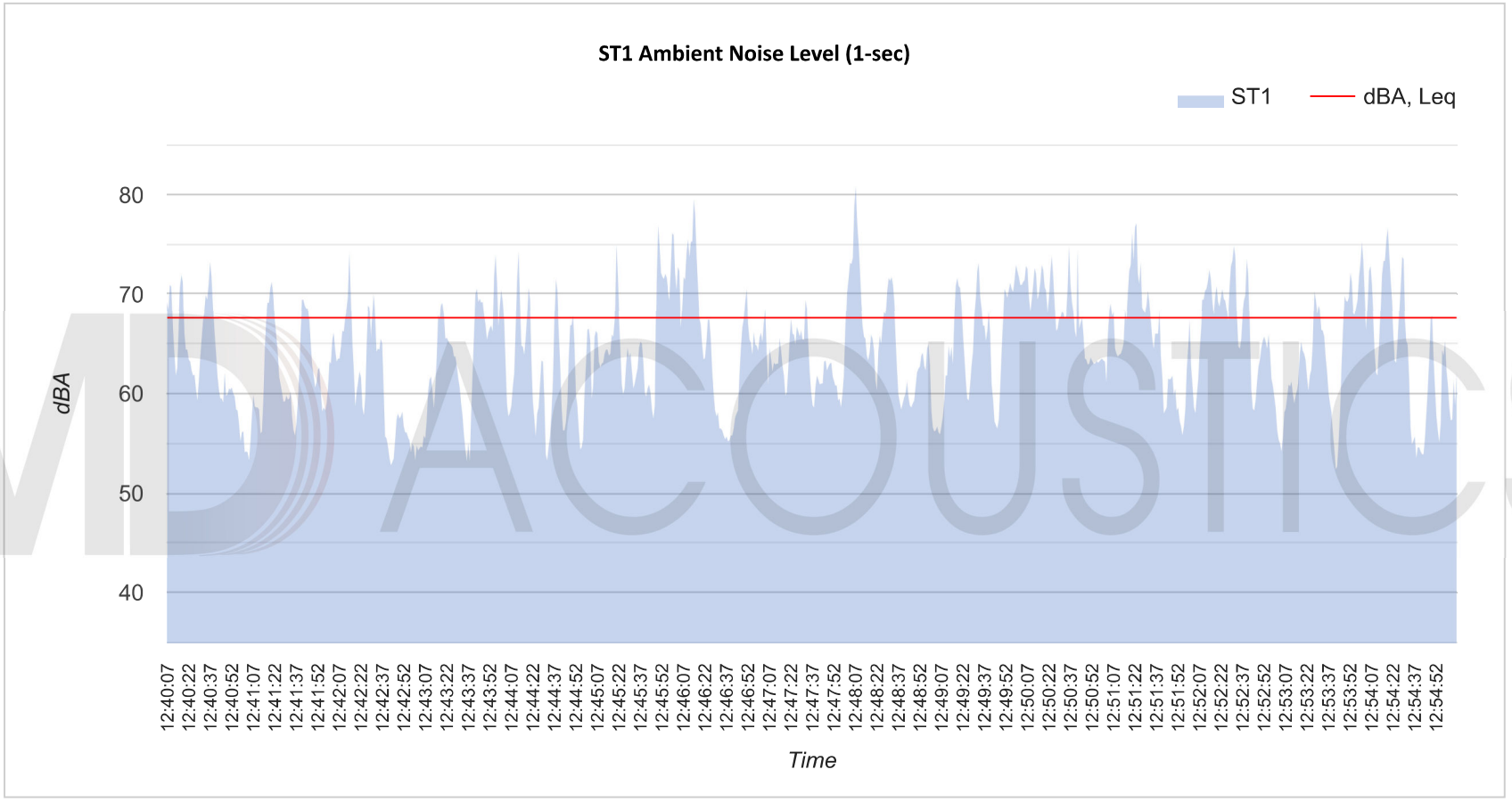
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST1	12:40 PM	12:55 PM	67.6	80.3	53.1	75	71.9	68.4	64.2	56.6
ST2	12:12 PM	12:27 PM	66.6	80.5	49.0	74.9	70.2	67	63	56.4
ST3	11:15 AM	11:30 AM	74.2	90.4	63.0	79.5	77.9	75	71.4	66.7
ST4	10:45 AM	11:00 AM	61.2	74.8	49.2	66.9	64.2	61.9	59.7	54
ST5	9:55 AM	10:10 AM	67.6	78.9	57.7	74.9	71.6	67.8	64.9	61
ST6	9:32 AM	9:47 AM	47.2	61.8	37.3	53.2	50.5	47.3	45.2	41.3
ST7	9:00 AM	9:15 AM	68	78.5	41.4	76.1	73.3	68.4	62.9	52
ST8	8:29 AM	8:44 AM	65.8	81.7	54.5	72	69.4	66.8	64	58.5

MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST1

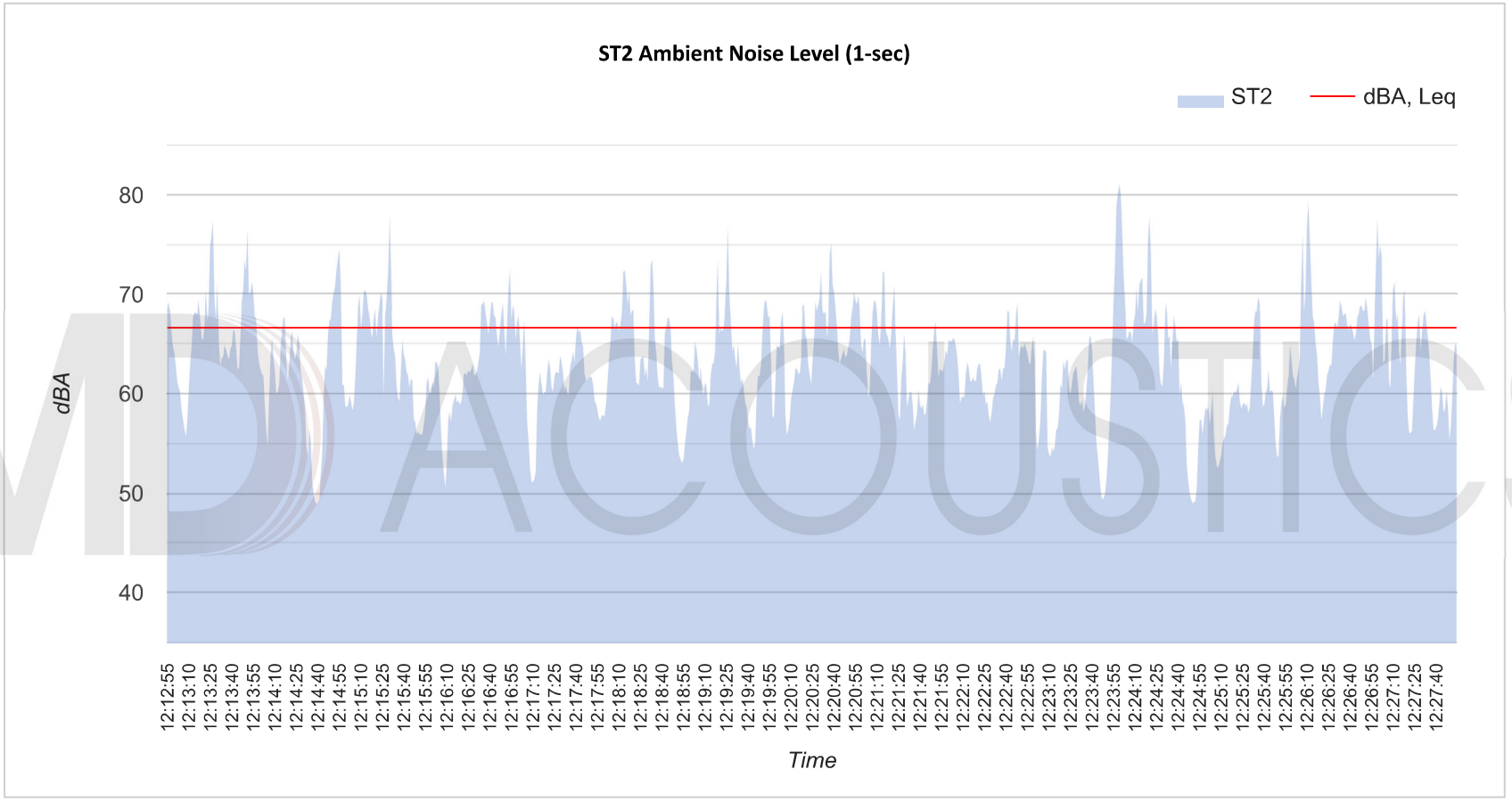
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST1	**Ground Type:**	Dirt, Asphalt		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST2

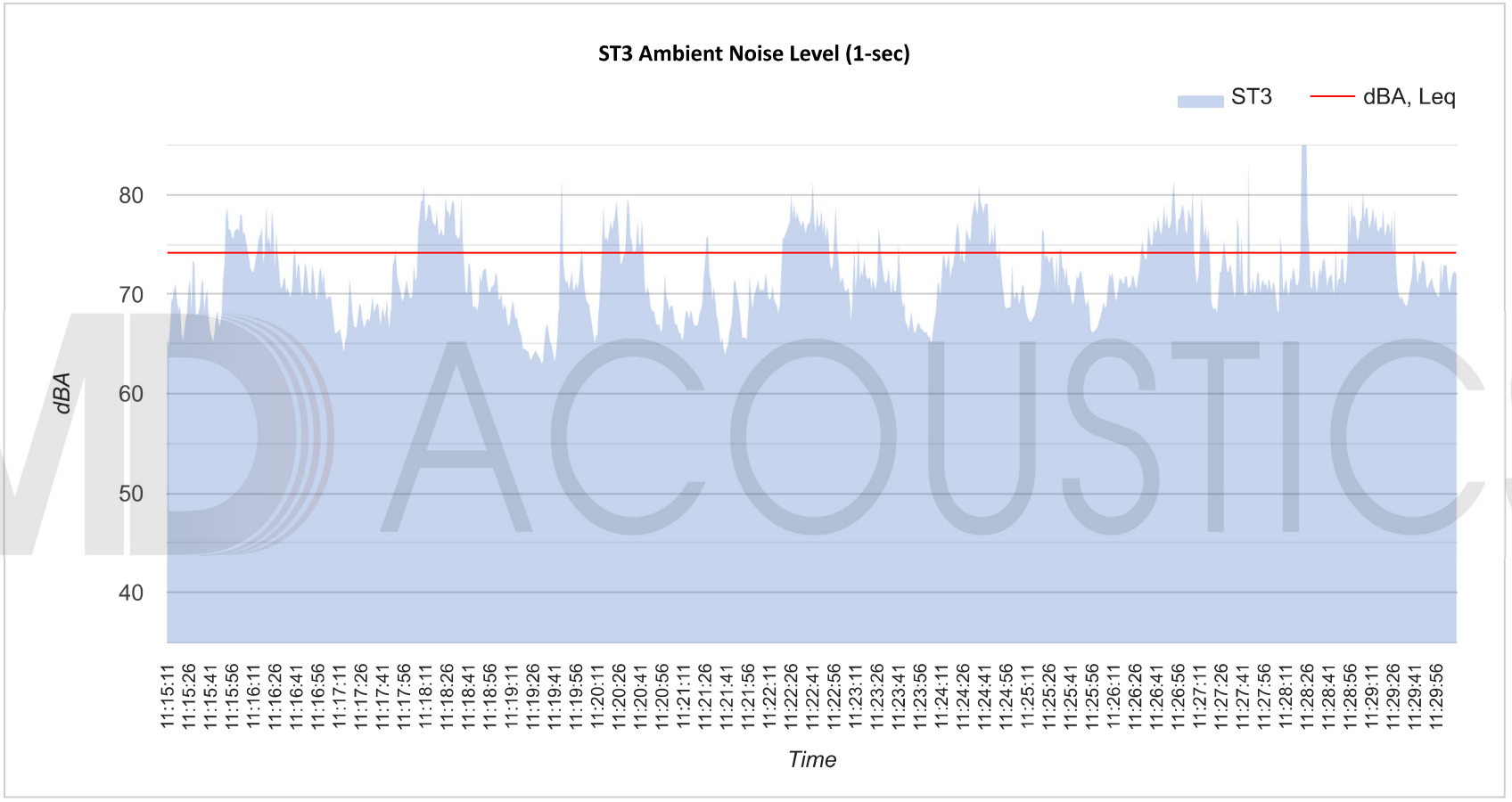
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST2	**Ground Type:**	Dirt, Asphalt		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST3

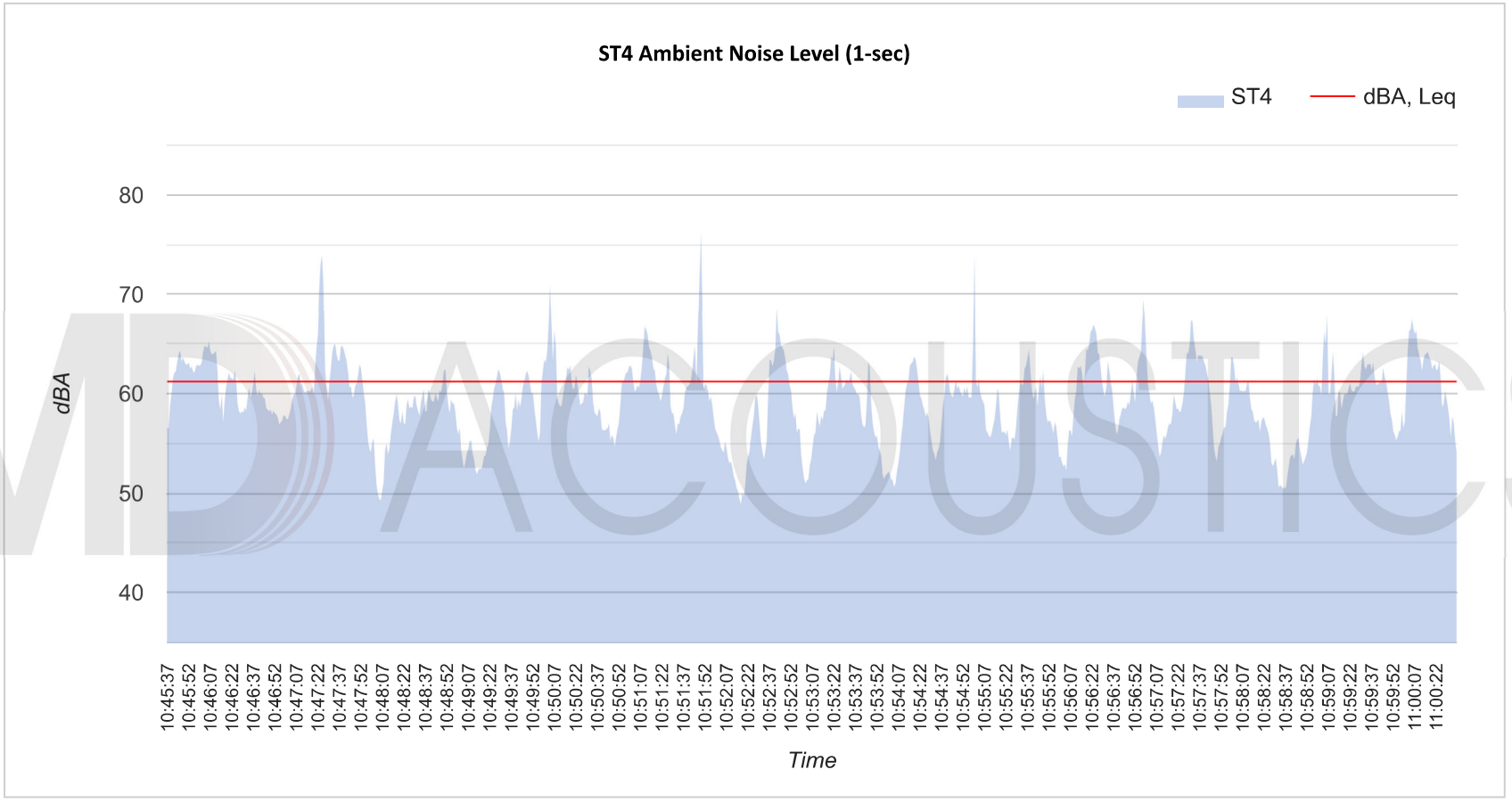
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST3	**Ground Type:**	Buildings and asphalt		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST4

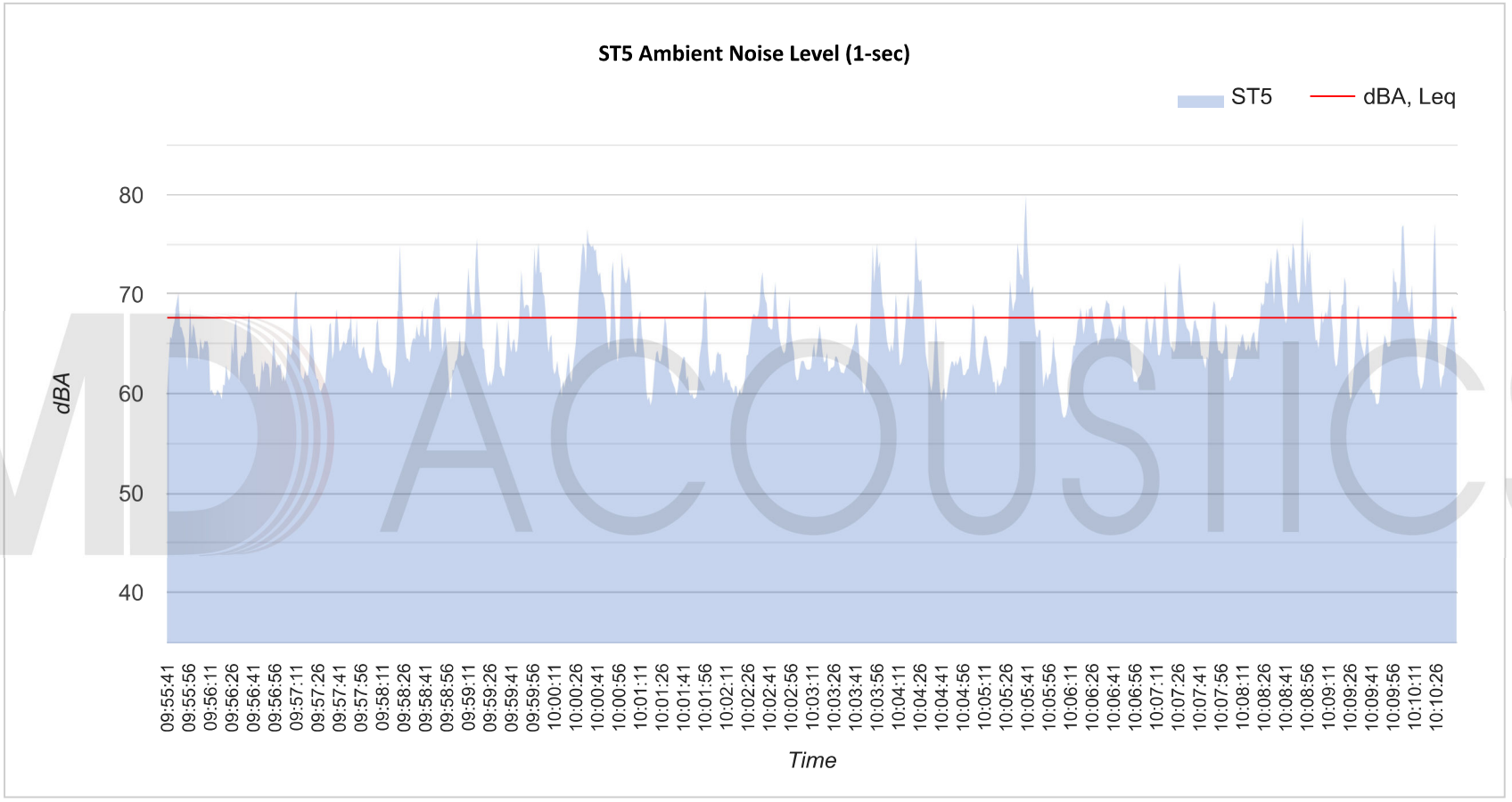
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST4	**Ground Type:**	Dirt, Asphalt		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST5

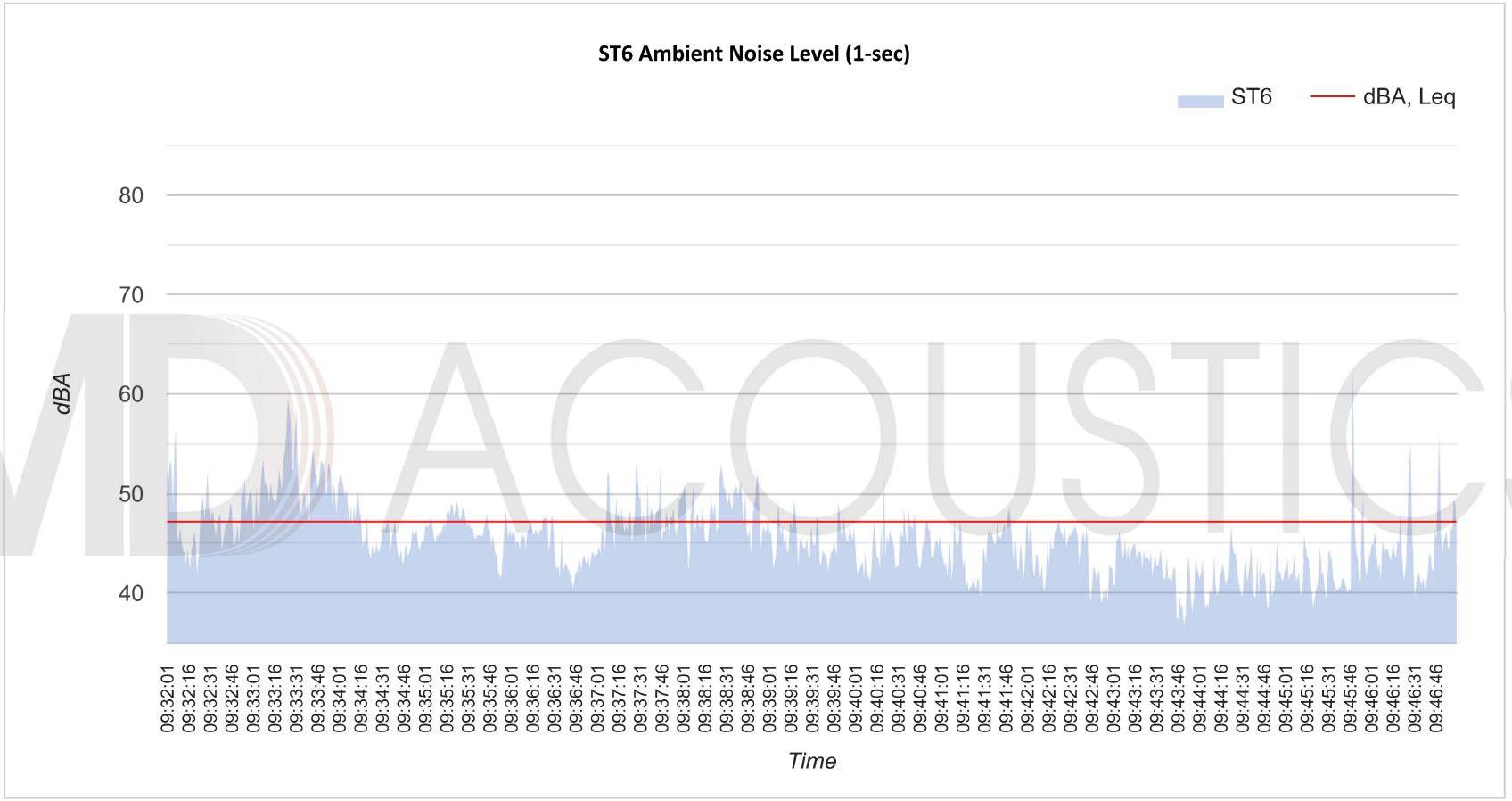
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST5	**Ground Type:**	Dirt, Asphalt		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST6

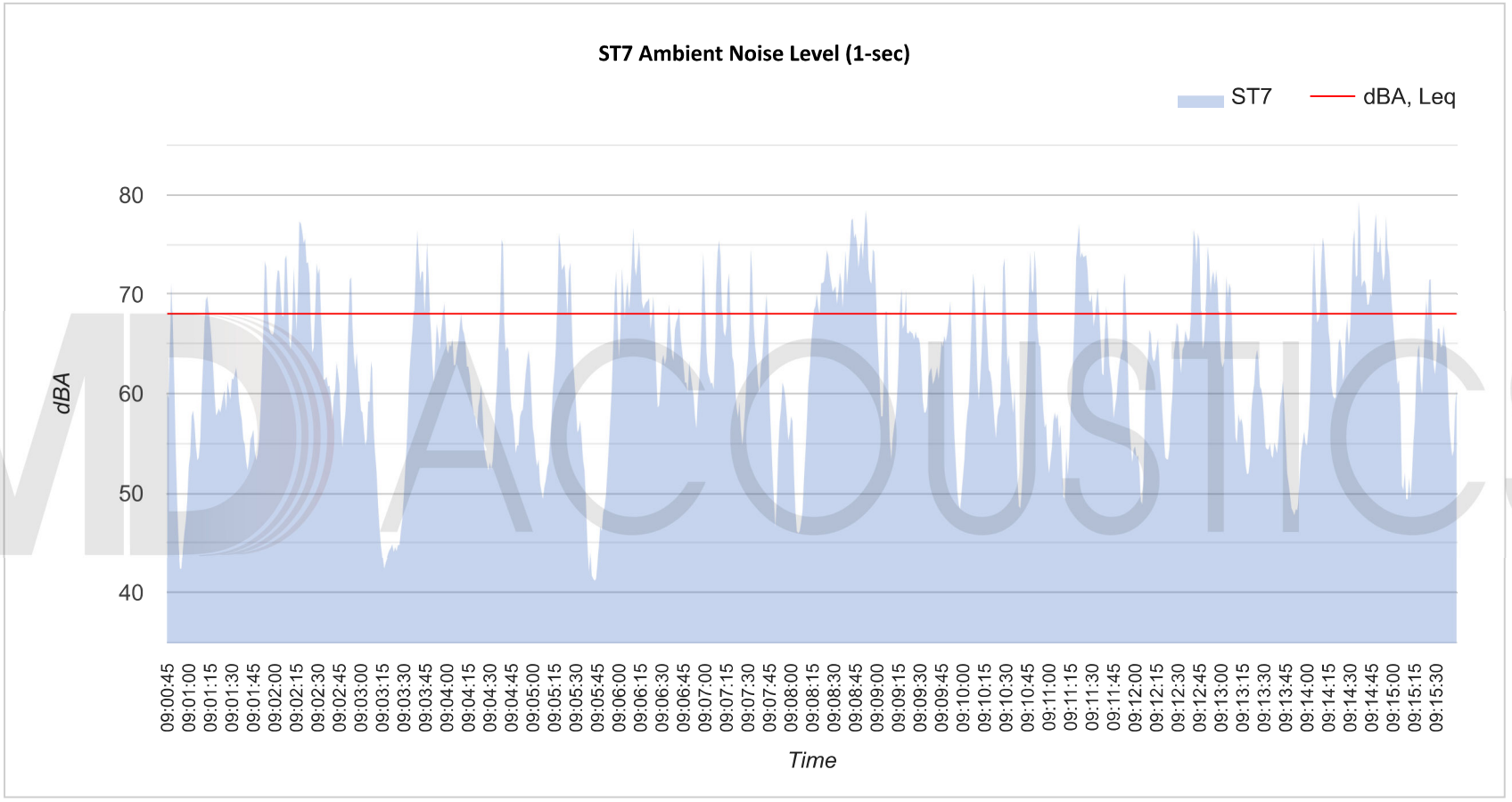
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST6	**Ground Type:**	Dirt		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST7

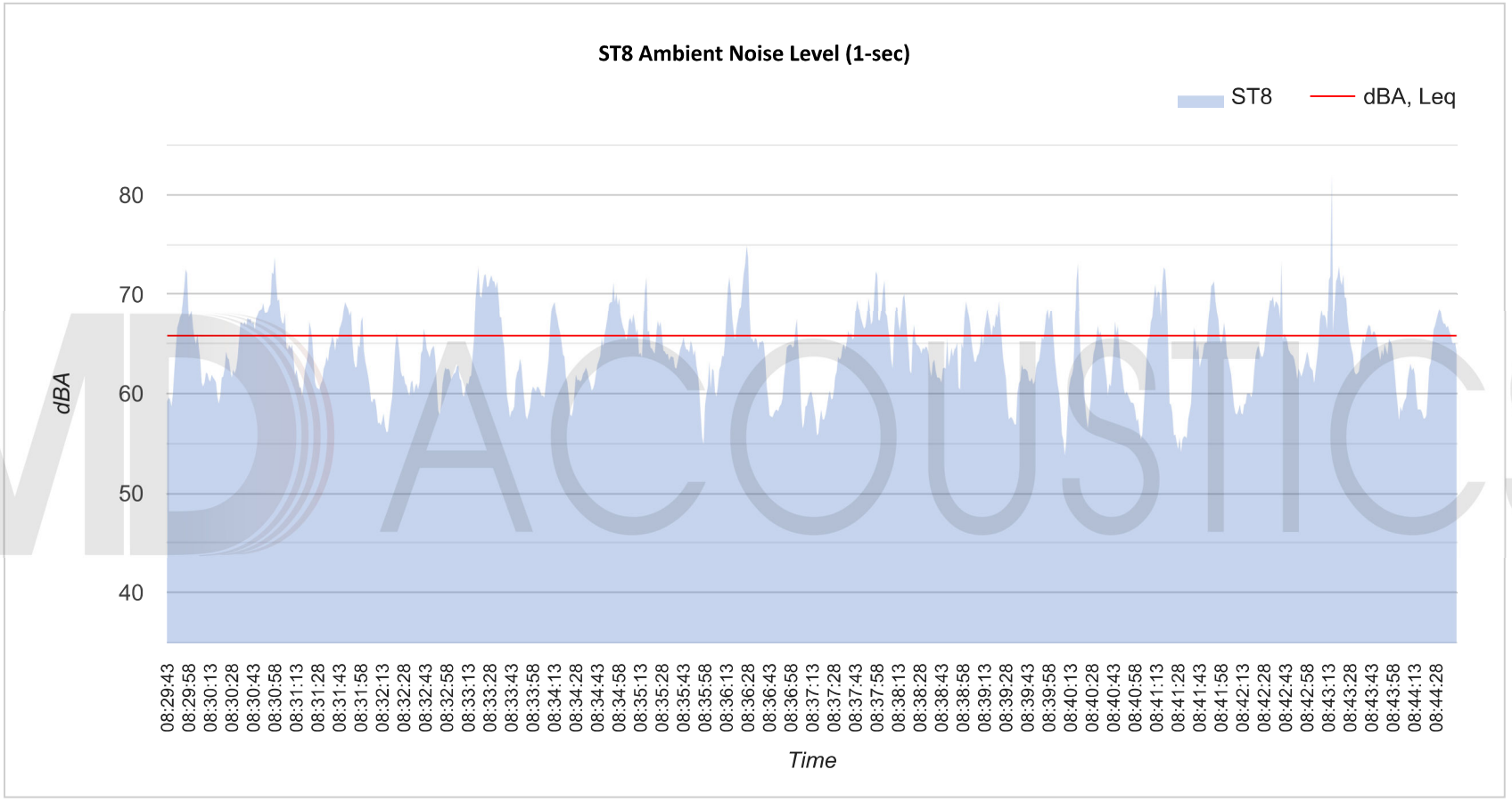
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST7	**Ground Type:**	Dirt, Asphalt		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - ST8

Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Flat	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**		Traffic Noise	
Site Id:	ST8	**Ground Type:**	Dirt, Asphalt		



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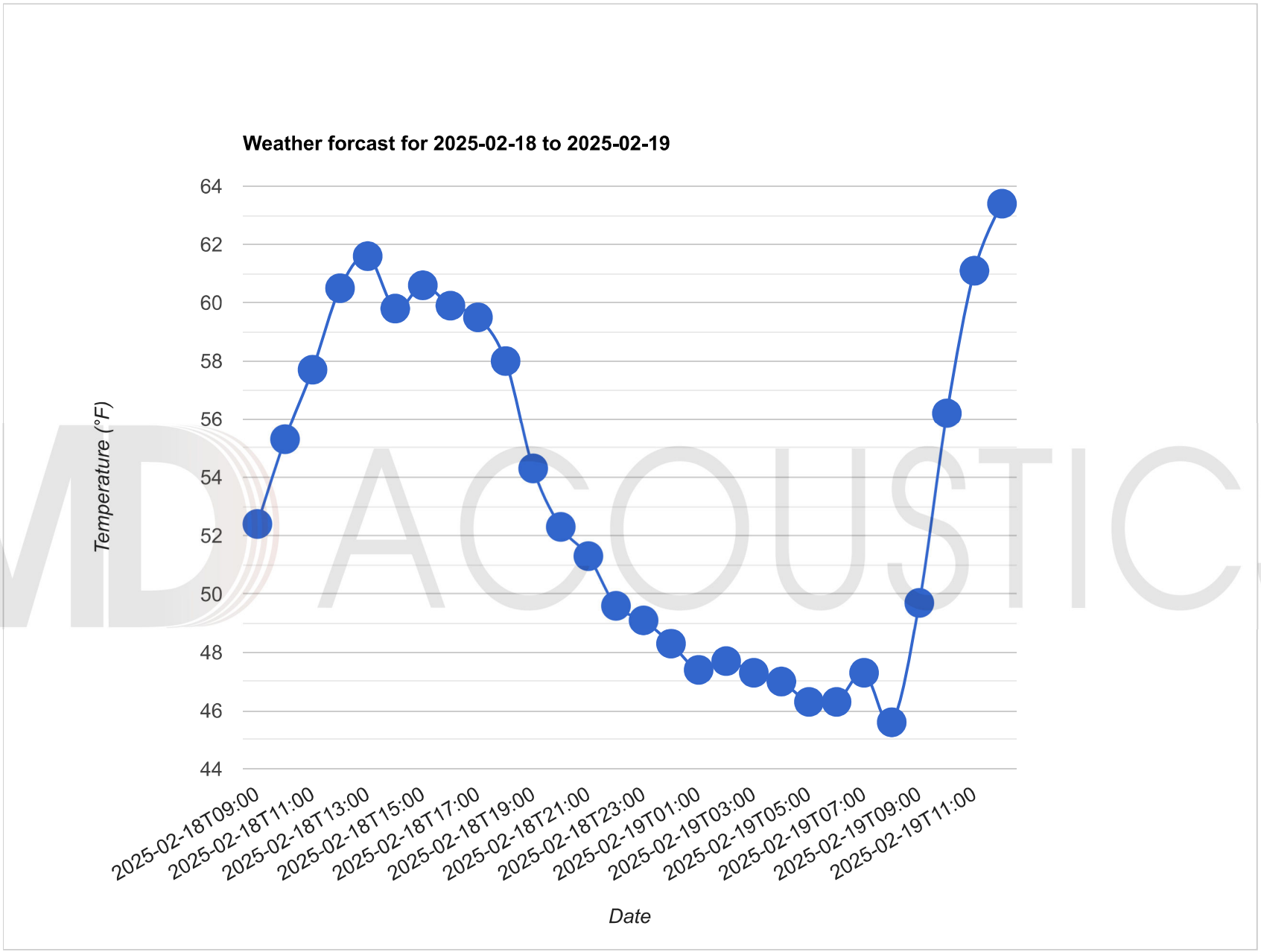

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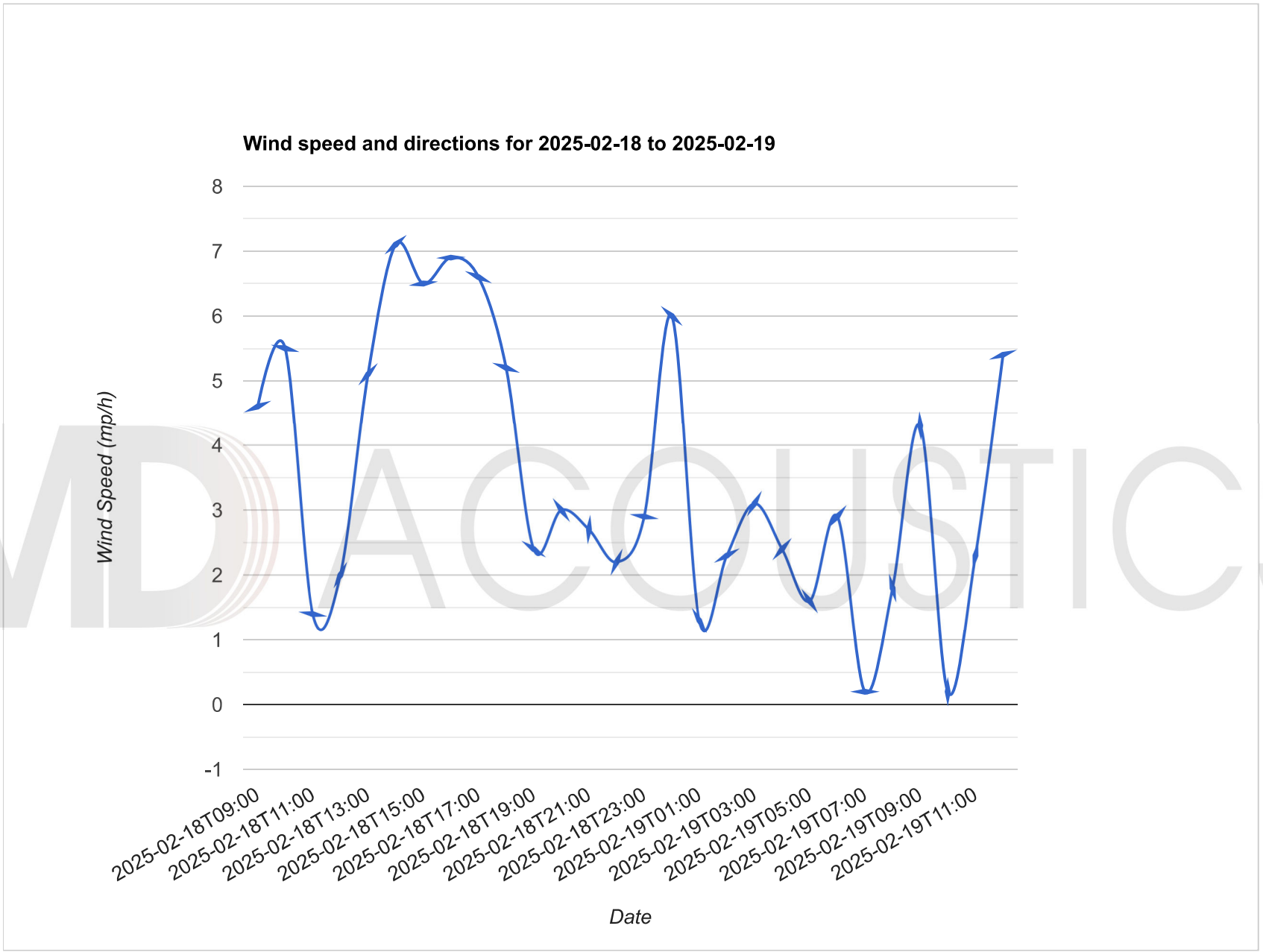


MD ACOUSTICS

Source: Global Forecast System (GFS) weather forcast model

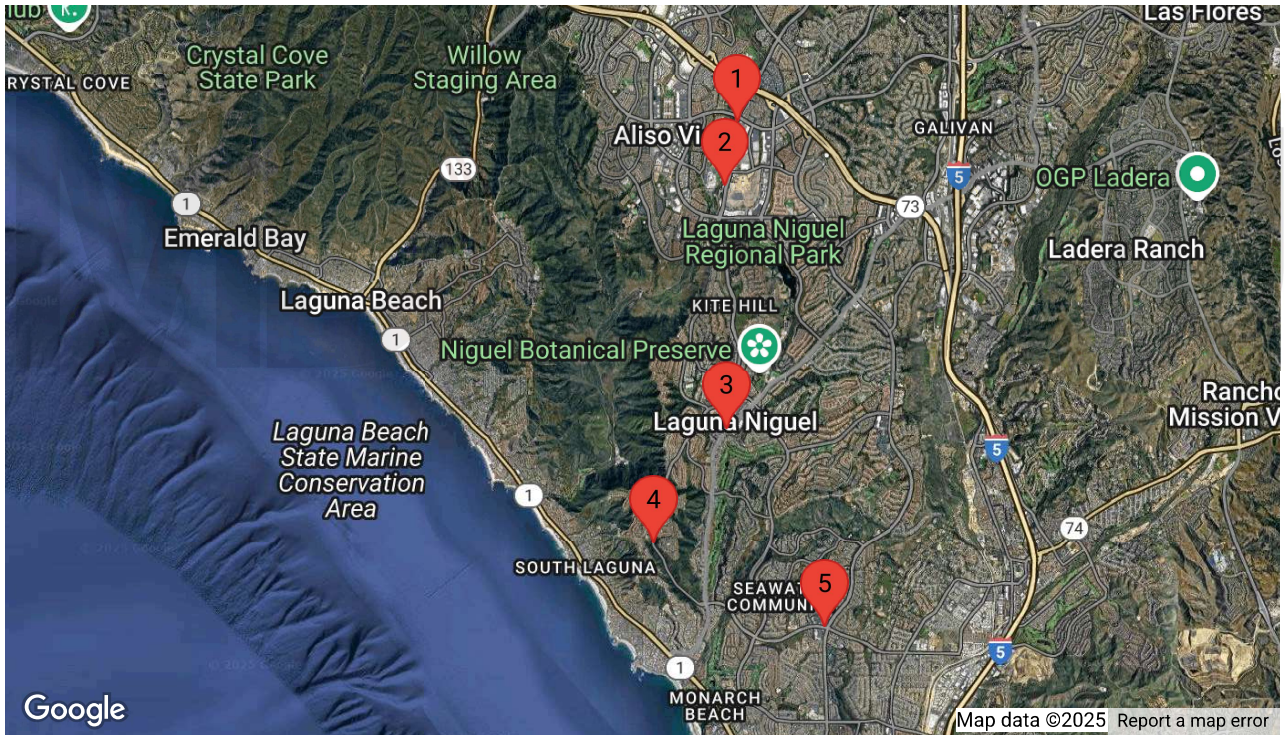
24-Hour Continuous Noise Measurement Datasheet - LT-1, LT-2, LT-3, LT-4, LT-5

Project Name:	Laguna Niguel GPU Noise
Project: #/Name:	0462-2023-011
Site Address/Location:	Laguna Niguel, CA
Date:	02/18/2025
Field Tech/Engineer:	Jason Schuyler / Rachel Edelman

Site Observations:

Temps in the 70'sF during the day and colder at night time with temps in the 40'sF. Mostly sunny with winds 0-10MPH. The primary noise source is traffic

Sound Meter:	XL2, NTI	**SN:**	A2A-07095-E0
Settings:	A-weighted, slow, 1-min, 24-hour duration		
Site Id:	LT-1, LT-2, LT-3, LT-4, LT-5		



STICS

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-1, LT-2, LT-3, LT-4, LT-5

Project Name:	Laguna Niguel GPU Noise	**Calibrator:**	Cal 200	
Site Address/Location:	Laguna Niguel, CA	**Cal Check: Pre-test:**	0 **Post Test:**	.05
Site Id:	LT-1, LT-2, LT-3, LT-4, LT-5			

Figure 1: LT1



Figure 2: LT2

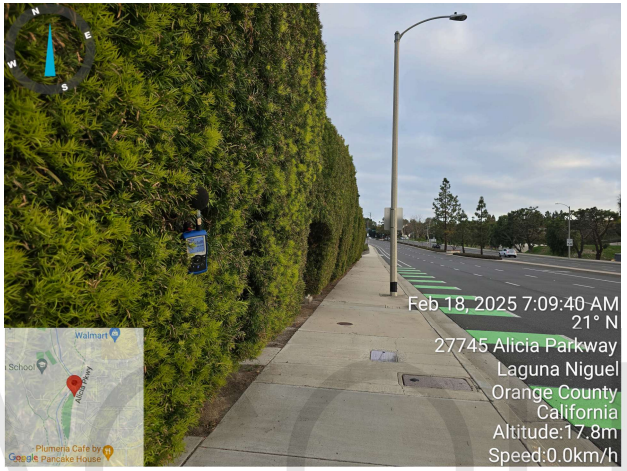


Figure 3: LT3



Figure 4: LT4

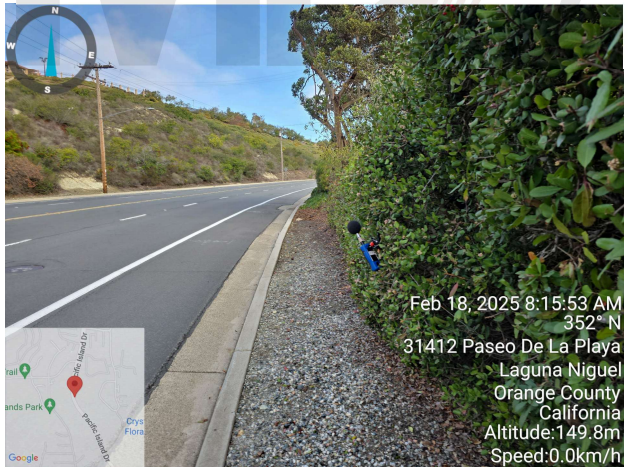


Figure 5: LT5



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-1

Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys	**Day:** 1 of 5	
Site Address/Location:	Laguna Niguel, CA		mostly open	**Noise Source(s) w/ Distance:**	
Site Id:	LT-1	**Meteorological Cond.:**	70F Sunny Winds 0-1Mph	road noise and residential noise	
		Ground Type:	Sandy soil and clay		

Table 1: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
2/18/2025	7:00 AM	8:00 AM	70.4	88.2	53.2	74.9	73.4	71.6	69	65.4
2/18/2025	8:00 AM	9:00 AM	70.3	83.2	53.2	73.9	73	72	69.6	65.9
2/18/2025	9:00 AM	10:00 AM	70.7	91.9	53.1	75.7	72.7	70.4	69.5	67.2
2/18/2025	10:00 AM	11:00 AM	71.4	98.7	54.3	74.4	72.1	70.3	69.5	68.1
2/18/2025	11:00 AM	12:00 PM	69.7	83.6	53.5	72.5	71.1	70	69.5	68.3
2/18/2025	12:00 PM	1:00 PM	69.6	83.2	53.7	71.2	70.9	70.2	69.5	68.2
2/18/2025	1:00 PM	2:00 PM	70.1	86.3	52.1	73.8	72	70.4	69.5	68.3
2/18/2025	2:00 PM	3:00 PM	70.7	95.1	54.7	73.5	72	70.9	69.3	66.1
2/18/2025	3:00 PM	4:00 PM	71.6	96	55.8	75.1	73.9	71.4	69.7	66.4
2/18/2025	4:00 PM	5:00 PM	70.1	84.7	55	72.9	72.1	71.1	70.2	66.1
2/18/2025	5:00 PM	6:00 PM	70.5	87.9	56.6	74.6	72.8	71.2	70.1	66.6
2/18/2025	6:00 PM	7:00 PM	71.5	99.2	54.6	74.5	72.9	71.3	69.7	66.1
2/18/2025	7:00 PM	8:00 PM	69.3	88.8	51.4	72.5	70.7	70.3	69.1	66.3
2/18/2025	8:00 PM	9:00 PM	71	95.2	51.5	80.4	72.8	69.7	67.9	65.5
2/18/2025	9:00 PM	10:00 PM	67.5	88.8	49.2	71.9	69.6	68.3	66.6	61.7
2/18/2025	10:00 PM	11:00 PM	64	78.9	46.7	67.1	66.3	65.3	63.7	59.3
2/18/2025	11:00 PM	12:00 AM	63.9	86.4	44.7	69.7	68.2	64.4	61.3	55.4
2/19/2025	12:00 AM	1:00 AM	59.7	79.2	43.3	66.3	64.1	61.9	55.8	50.2
2/19/2025	1:00 AM	2:00 AM	56.1	76.6	42.2	64	60.9	57.3	50.8	44.6
2/19/2025	2:00 AM	3:00 AM	57.5	78.9	41.6	66.6	61.3	57.5	52.6	45.8
2/19/2025	3:00 AM	4:00 AM	59.9	83.2	42.1	68.7	65.1	59.2	53.3	47
2/19/2025	4:00 AM	5:00 AM	63	82	43.5	68.2	67.1	64.6	60.7	50.7
2/19/2025	5:00 AM	6:00 AM	65	81	47.8	69	68.1	67	64.1	57
2/19/2025	6:00 AM	7:00 AM	69.9	93.1	51.4	75.8	72.9	70.3	68.5	64.2

	DNL	71.7

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-2

Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys with road
Site Address/Location:	Laguna Niguel, CA	**Day:**	2 of 5
Site Id:	LT-2	**Noise Source(s) w/ Distance:**	road noise and residential noise
		Meteorological Cond.:	70F Sunny Winds 0-10Mph
		Ground Type:	Sandy soil and clay

Table 2: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
2/18/2025	8:00 AM	9:00 AM	74.1	88	45	77.9	76.9	75.4	73.8	69.8
2/18/2025	9:00 AM	10:00 AM	73.2	87	42.8	76.9	76.4	74.3	72.8	68.9
2/18/2025	10:00 AM	11:00 AM	73.6	92.6	46.1	77.6	76.6	74.9	72.7	69
2/18/2025	11:00 AM	12:00 PM	73.1	87.9	47.6	76.2	75.4	74.1	72.9	69.8
2/18/2025	12:00 PM	1:00 PM	73.3	86.7	52.8	75.9	75.4	74.3	73.3	70.1
2/18/2025	1:00 PM	2:00 PM	74	91	50.6	77.5	75.8	74.9	73.8	70.9
2/18/2025	2:00 PM	3:00 PM	73.6	95	48	76.9	76.2	74.6	72.7	69.6
2/18/2025	3:00 PM	4:00 PM	74.3	86.9	48.6	77.5	76.4	75.3	74.3	71.2
2/18/2025	4:00 PM	5:00 PM	74.2	87.1	47.1	77	76.6	75.7	74.2	69.4
2/18/2025	5:00 PM	6:00 PM	74.1	86.7	45.4	77	76.5	75.2	73.8	70.5
2/18/2025	6:00 PM	7:00 PM	72.9	84.5	47.2	76.1	75.5	74.3	72.6	68.2
2/18/2025	7:00 PM	8:00 PM	71.7	85.6	48	75.1	74.7	73.2	70.8	66.5
2/18/2025	8:00 PM	9:00 PM	70.9	85.6	46.7	73.9	73.3	71.7	70.8	67.8
2/18/2025	9:00 PM	10:00 PM	71.2	87.9	45	74.3	73.8	72.5	70.8	66.5
2/18/2025	10:00 PM	11:00 PM	68.3	86.5	42	72.6	71.4	70.1	67.5	62.6
2/18/2025	11:00 PM	12:00 AM	65	82.6	41.6	71.1	68.9	67	62.5	48.7
2/19/2025	12:00 AM	1:00 AM	62.1	83.6	42.2	69.3	66.9	63.6	56.5	45.2
2/19/2025	1:00 AM	2:00 AM	59.2	82	38.9	67.8	63.9	59.2	46.5	40.4
2/19/2025	2:00 AM	3:00 AM	58.9	80.2	36.7	65.1	64.6	59.1	47.4	39.6
2/19/2025	3:00 AM	4:00 AM	59.7	79.2	36.4	65.7	65.2	61.7	49	39.8
2/19/2025	4:00 AM	5:00 AM	63.6	80.8	39.1	69.7	67.9	64.6	61.9	43.9
2/19/2025	5:00 AM	6:00 AM	69.1	87.3	44.9	74.4	72.6	70	67.8	62.7
2/19/2025	6:00 AM	7:00 AM	73.1	89.3	49.7	78.8	76.4	73.3	71.9	67.7
2/19/2025	7:00 AM	8:00 AM	75.7	89.9	49.7	78.7	78.1	77.2	75.6	71.4

	DNL	74.8

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-3

Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys with road in l
Site Address/Location:	Laguna Niguel, CA	**Day:**	3 of 5
Site Id:	LT-3	**Noise Source(s) w/ Distance:**	road noise and residential noise
		Meteorological Cond.:	70F Sunny Winds 0-10Mph
		Ground Type:	Sandy soil and clay

Table 3: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
2/18/2025	8:00 AM	9:00 AM	63.4	74.7	47.5	71.6	68.9	61.8	58.8	55.6
2/18/2025	9:00 AM	10:00 AM	66.6	78.7	52.9	71.5	71.2	67.5	64.1	62.1
2/18/2025	10:00 AM	11:00 AM	60.9	77.1	53	64	63.3	62.8	59.7	57.6
2/18/2025	11:00 AM	12:00 PM	62.3	71.8	52.5	64.3	64	63.5	62.9	58.3
2/18/2025	12:00 PM	1:00 PM	60.2	72.9	48.8	64.3	63.8	62.7	57.6	54.7
2/18/2025	1:00 PM	2:00 PM	62.9	79.1	48.1	67.4	67	64.1	61.8	57.1
2/18/2025	2:00 PM	3:00 PM	61.7	80.2	50.3	64.5	63.7	62.6	61	57.6
2/18/2025	3:00 PM	4:00 PM	64.4	83.7	53.3	67.1	65.2	63.9	63.6	62.5
2/18/2025	4:00 PM	5:00 PM	62.6	77.4	51	66.2	65.5	63.7	62.6	58
2/18/2025	5:00 PM	6:00 PM	59.5	79.5	45.1	64.8	63.6	59.8	57.4	54.9
2/18/2025	6:00 PM	7:00 PM	61.7	89.7	44.9	62.3	59.5	57.4	56.3	53.8
2/18/2025	7:00 PM	8:00 PM	56.4	75.8	44.1	62.4	58.2	56.7	55.3	52.5
2/18/2025	8:00 PM	9:00 PM	58	83	43.3	67.3	56.6	55.1	53.8	51.8
2/18/2025	9:00 PM	10:00 PM	53.7	73.8	43.3	59.3	55.9	54	52.8	49
2/18/2025	10:00 PM	11:00 PM	53.3	77.2	42.8	55.4	54.7	53.2	51.5	47.6
2/18/2025	11:00 PM	12:00 AM	51.7	79.1	42.5	57.1	53.2	51	49.2	44.2
2/19/2025	12:00 AM	1:00 AM	47	63.7	41.8	50.6	50.2	48.2	46.1	42.7
2/19/2025	1:00 AM	2:00 AM	46.8	64	41.4	52.3	49.7	47.5	44.4	42.2
2/19/2025	2:00 AM	3:00 AM	44.1	63.8	41.2	49.5	46.6	43	42.4	41.9
2/19/2025	3:00 AM	4:00 AM	45.2	62.7	41.2	50.9	48	46	42.9	41.9
2/19/2025	4:00 AM	5:00 AM	49.2	67.6	41.8	53.6	52.6	50.4	48.1	43
2/19/2025	5:00 AM	6:00 AM	53.5	73.9	42.9	59.3	55.8	53.7	52	48.6
2/19/2025	6:00 AM	7:00 AM	57.8	75.2	44.3	63	61.4	58.8	56.9	52.2
2/19/2025	7:00 AM	8:00 AM	62.1	75.1	49	65.5	64.5	64.1	61.1	58.3

	DNL	61.6

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-4

Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys w/ roads in th	**Day:** 4 of 5	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**	70F Sunny Winds 0-10 Mph	**Noise Source(s) w/ Distance:**	road noise and residential noise
Site Id:	LT-4	**Ground Type:**	Sandy soil and clay		

Table 4: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
2/18/2025	9:00 AM	10:00 AM	67.9	90.1	35.6	72.8	70.8	69.1	66.5	60.6
2/18/2025	10:00 AM	11:00 AM	66.9	84.2	33.9	71.3	70	68.5	66.1	61
2/18/2025	11:00 AM	12:00 PM	67.6	86.3	35.2	71.7	69.9	68.9	66.9	61.7
2/18/2025	12:00 PM	1:00 PM	67.9	85.8	34.5	73.4	70.4	69	66.8	63.5
2/18/2025	1:00 PM	2:00 PM	67.3	83.1	33.8	71.2	70	68.6	66.9	60.7
2/18/2025	2:00 PM	3:00 PM	68.2	85.6	34.1	72.3	71.3	69.3	67.5	62.5
2/18/2025	3:00 PM	4:00 PM	69.1	89.8	33.8	73.4	72.3	70.4	67.7	63.5
2/18/2025	4:00 PM	5:00 PM	68.4	83.5	33.1	72.1	71.2	69.5	68	62.8
2/18/2025	5:00 PM	6:00 PM	69	82.6	33.3	73.3	72.3	70.5	68.5	61.8
2/18/2025	6:00 PM	7:00 PM	67.2	85.8	32.6	71.8	70.6	68.8	66.7	58.8
2/18/2025	7:00 PM	8:00 PM	65.3	86.1	31.3	71.3	69	66.7	64.1	41.9
2/18/2025	8:00 PM	9:00 PM	63.2	80.6	31.4	67.8	66.9	65.5	62.3	40.6
2/18/2025	9:00 PM	10:00 PM	63.9	85.3	31.4	71.2	67.9	65.3	62.2	33
2/18/2025	10:00 PM	11:00 PM	60.4	81.8	31	67.8	66.1	62.2	50.7	32.2
2/18/2025	11:00 PM	12:00 AM	55.5	78.4	30.9	65.2	61.8	50.9	34.7	32.1
2/19/2025	12:00 AM	1:00 AM	55.6	81.9	30.9	65.9	61.4	33.2	32.3	31.7
2/19/2025	1:00 AM	2:00 AM	48.6	78.8	30.8	51	50.9	40	32.2	31.8
2/19/2025	2:00 AM	3:00 AM	47.3	76.4	30.9	57	40.8	32.4	32.1	31.9
2/19/2025	3:00 AM	4:00 AM	48.9	77.2	31.1	61.7	35.5	32.7	32.5	32.2
2/19/2025	4:00 AM	5:00 AM	50.8	72.8	31.3	61.2	51.2	51	32.8	32.3
2/19/2025	5:00 AM	6:00 AM	58.4	81	31.3	67.3	65.3	57.6	33.5	32.7
2/19/2025	6:00 AM	7:00 AM	63.7	87.4	32.9	72.7	66.1	63.9	59.4	38.3
2/19/2025	7:00 AM	8:00 AM	68.4	84.1	33.3	71.8	71.2	70.3	67.9	60.8
2/19/2025	8:00 AM	9:00 AM	69.1	86.2	38.5	73.3	72.7	70.1	68.5	63.6

	DNL	67.6

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-5

Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys	**Day:** 5 of 5	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**	70F Sunny Winds 0-	**Noise Source(s) w/ Distance:**	
Site Id:	LT-5		10 Mph	road noise and residential noise	
		Ground Type:	Sandy soil and clay		

Table 5: Baseline Noise Measurement Summary

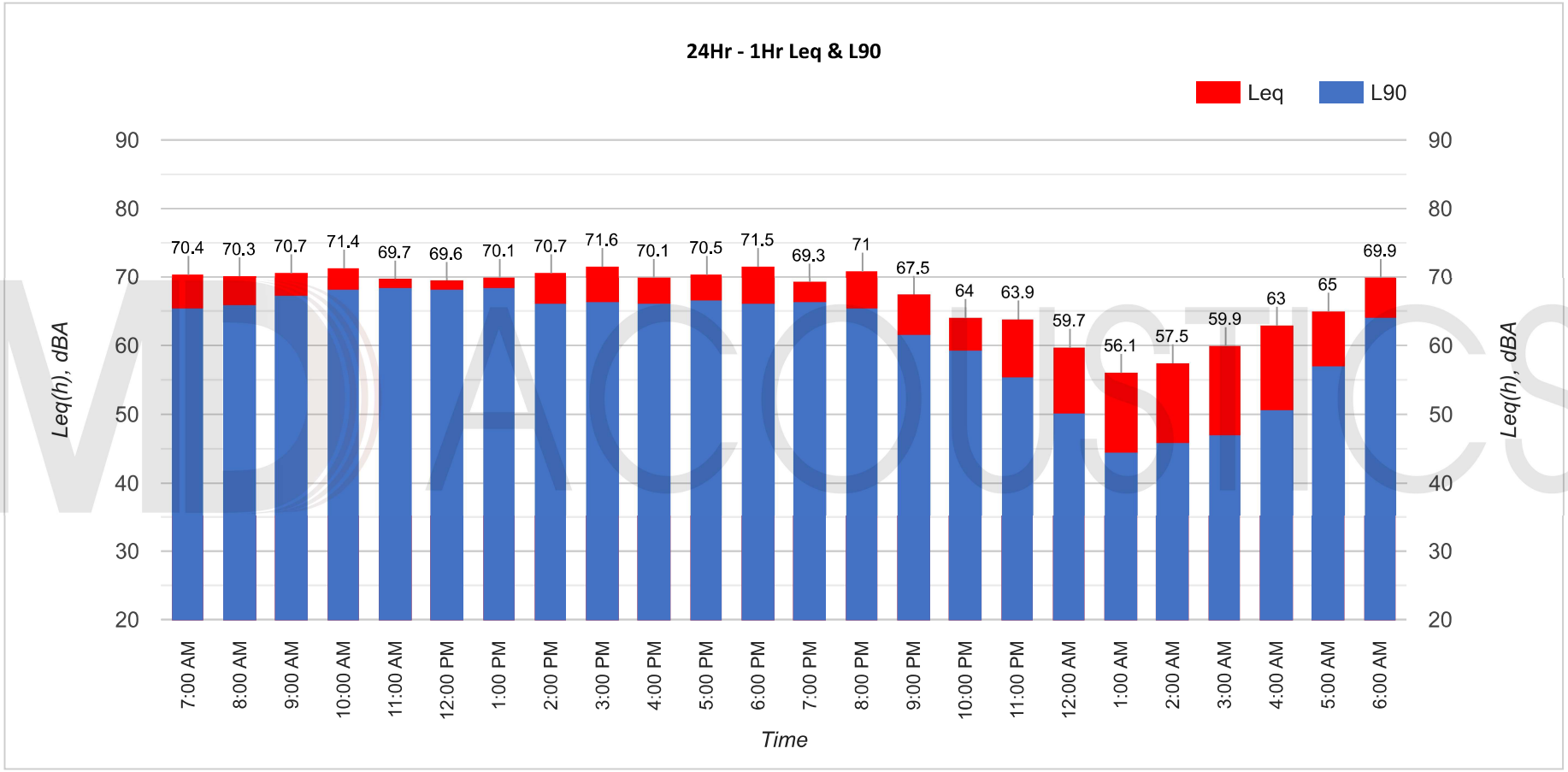
Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
2/18/2025	2:00 PM	3:00 PM	64.9	88.4	47.4	72.4	67.4	65.1	63.1	60.7
2/18/2025	3:00 PM	4:00 PM	71.3	102.9	51.9	70.7	67.7	66.2	64.8	61.3
2/18/2025	4:00 PM	5:00 PM	65.3	82.5	51.3	69.4	68.4	66.5	64.3	61.4
2/18/2025	5:00 PM	6:00 PM	66	81.8	51.2	69.7	68.2	67	65.8	61.8
2/18/2025	6:00 PM	7:00 PM	65.7	84.2	51.8	70.6	68.2	66.2	64.4	62.1
2/18/2025	7:00 PM	8:00 PM	68.3	93.1	49.6	76	68	64.9	62.8	60.9
2/18/2025	8:00 PM	9:00 PM	63.1	78.5	48.5	67.8	65.6	63.6	62	59.1
2/18/2025	9:00 PM	10:00 PM	62.3	78.7	48.3	67.4	65.8	62.6	61	58
2/18/2025	10:00 PM	11:00 PM	63.5	89.2	41.6	67.2	64.5	62.4	60.1	56.1
2/18/2025	11:00 PM	12:00 AM	60.9	86.3	42	69.9	62.6	59.7	56.2	49.8
2/19/2025	12:00 AM	1:00 AM	57.1	80	41	64.3	60.4	57.4	52.6	45.3
2/19/2025	1:00 AM	2:00 AM	57	75.8	41.2	65.4	60.9	56.2	51.8	45.1
2/19/2025	2:00 AM	3:00 AM	53.8	75.9	40.8	60.2	56.8	54.5	49.4	41.8
2/19/2025	3:00 AM	4:00 AM	55.8	79.3	41.1	64.2	60.4	56.7	47.4	42.8
2/19/2025	4:00 AM	5:00 AM	56.5	73.5	42.4	61.6	61	58.1	53.3	44.5
2/19/2025	5:00 AM	6:00 AM	61.1	80.2	43	65.4	64.3	61.8	60.3	55.1
2/19/2025	6:00 AM	7:00 AM	68.3	92.5	48.2	71.7	69.8	66.2	63.9	58.7
2/19/2025	7:00 AM	8:00 AM	67.2	82.5	54.1	71.9	69.8	67.4	66.5	64.3
2/19/2025	8:00 AM	9:00 AM	66.2	76.4	53.4	69.7	68.8	67	65.6	63.5
2/19/2025	9:00 AM	10:00 AM	66.6	89	53.2	74.1	69	65.9	64.7	62.2
2/19/2025	10:00 AM	11:00 AM	69.2	93.4	51	78.2	72.2	65.5	63.8	60.7
2/19/2025	11:00 AM	12:00 PM	63.6	83	50.4	66.8	65.6	64.2	62.6	60.2
2/19/2025	12:00 PM	1:00 PM	81	103.2	51.2	91.1	82	69.5	63.8	60.3
2/19/2025	1:00 PM	2:00 PM	63.9	81.2	49.8	68.2	66.8	64.5	63.1	60.7

	DNL	70.7

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-1

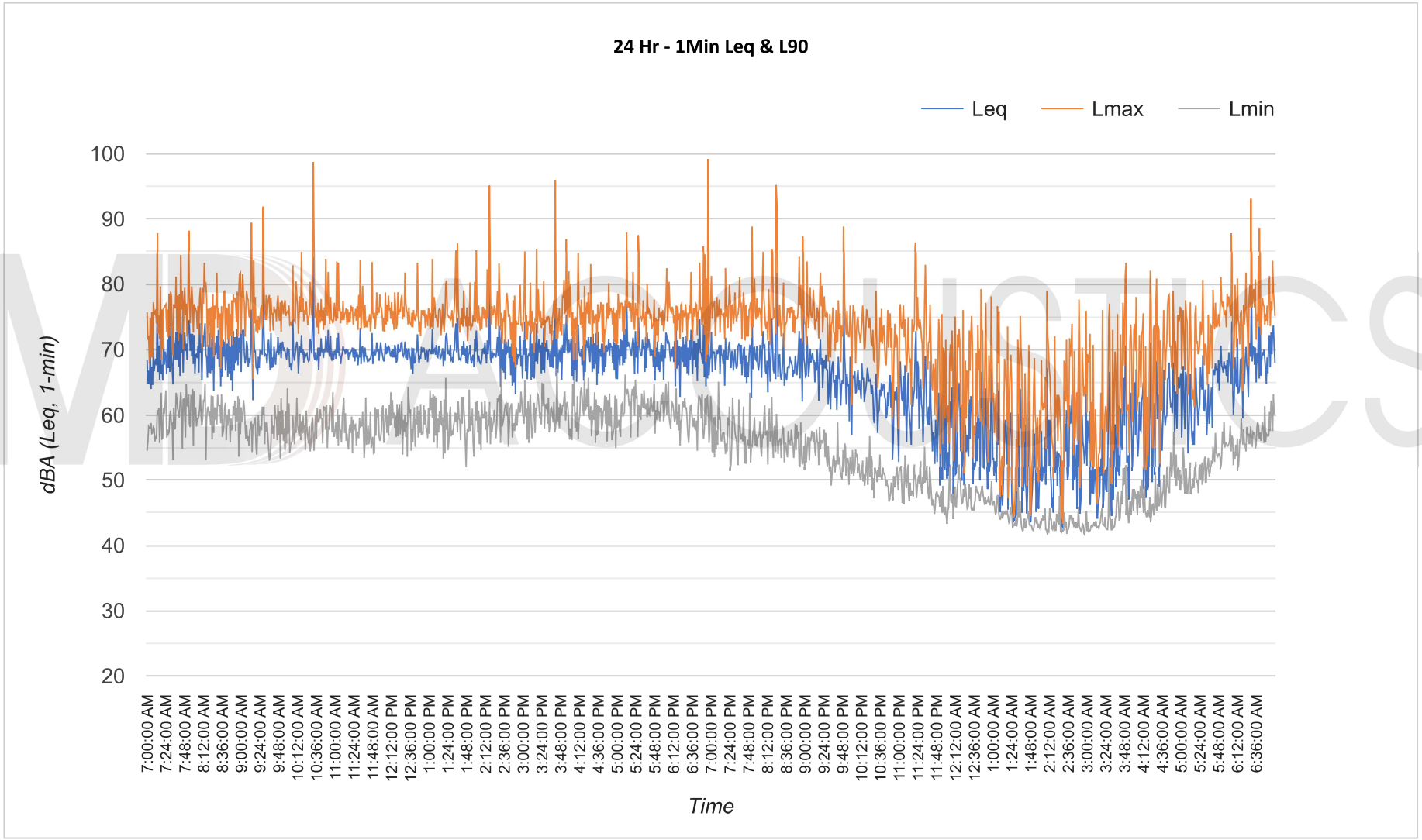
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys	**Day:** 1 of 5	
Site Address/Location:	Laguna Niguel, CA		mostly open	**Noise Source(s) w/ Distance:**	
Site Id:	LT-1	**Meteorological Cond.:**	70F Sunny Winds 0-1Mph	road noise and residential noise	
		Ground Type:	Sandy soil and clay		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-1

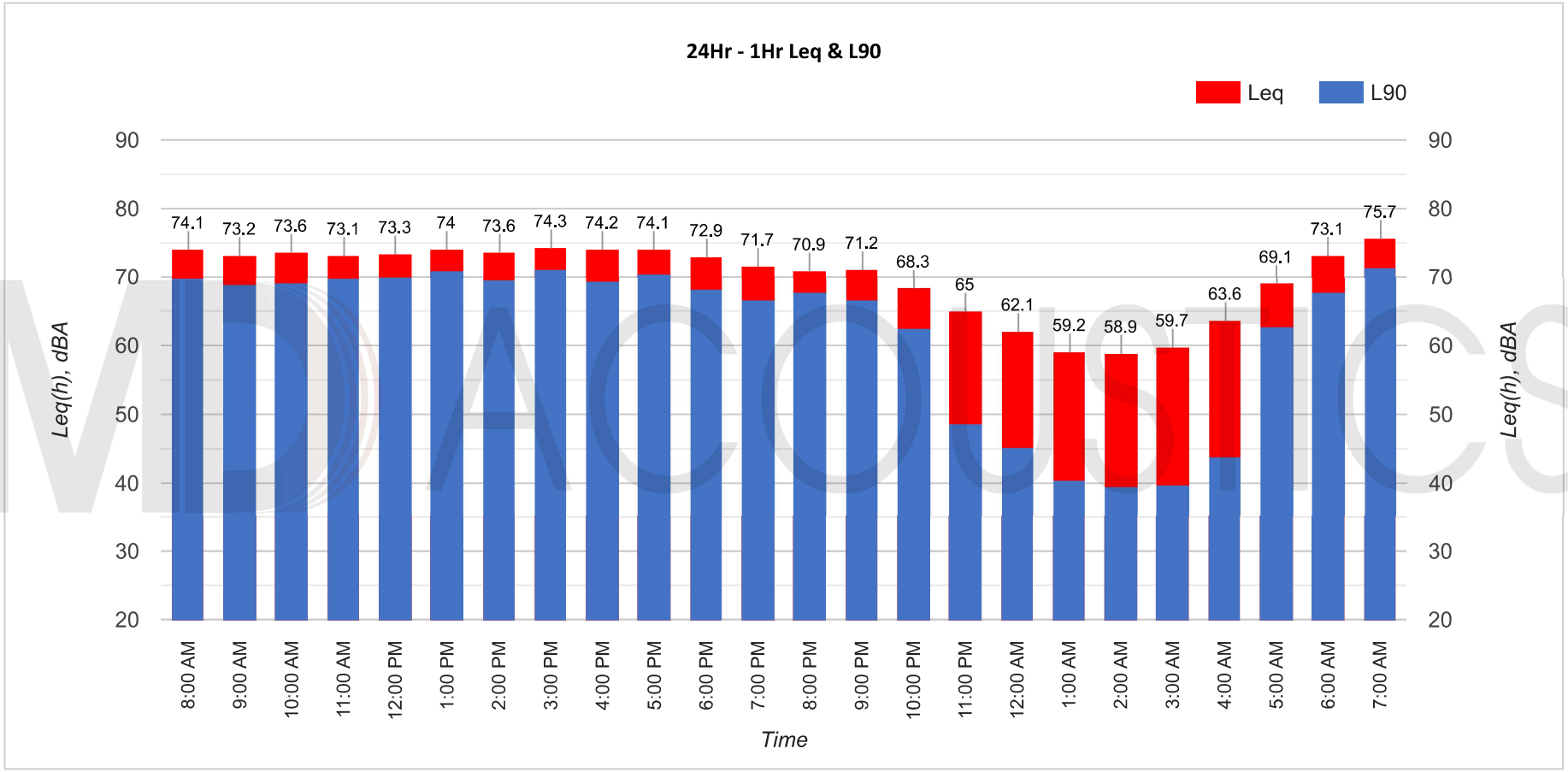
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys	**Day:** 1 of 5	
Site Address/Location:	Laguna Niguel, CA		mostly open	**Noise Source(s) w/ Distance:**	
Site Id:	LT-1	**Meteorological Cond.:**	70F Sunny Winds 0-1Mph	road noise and residential noise	
		Ground Type:	Sandy soil and clay		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-2

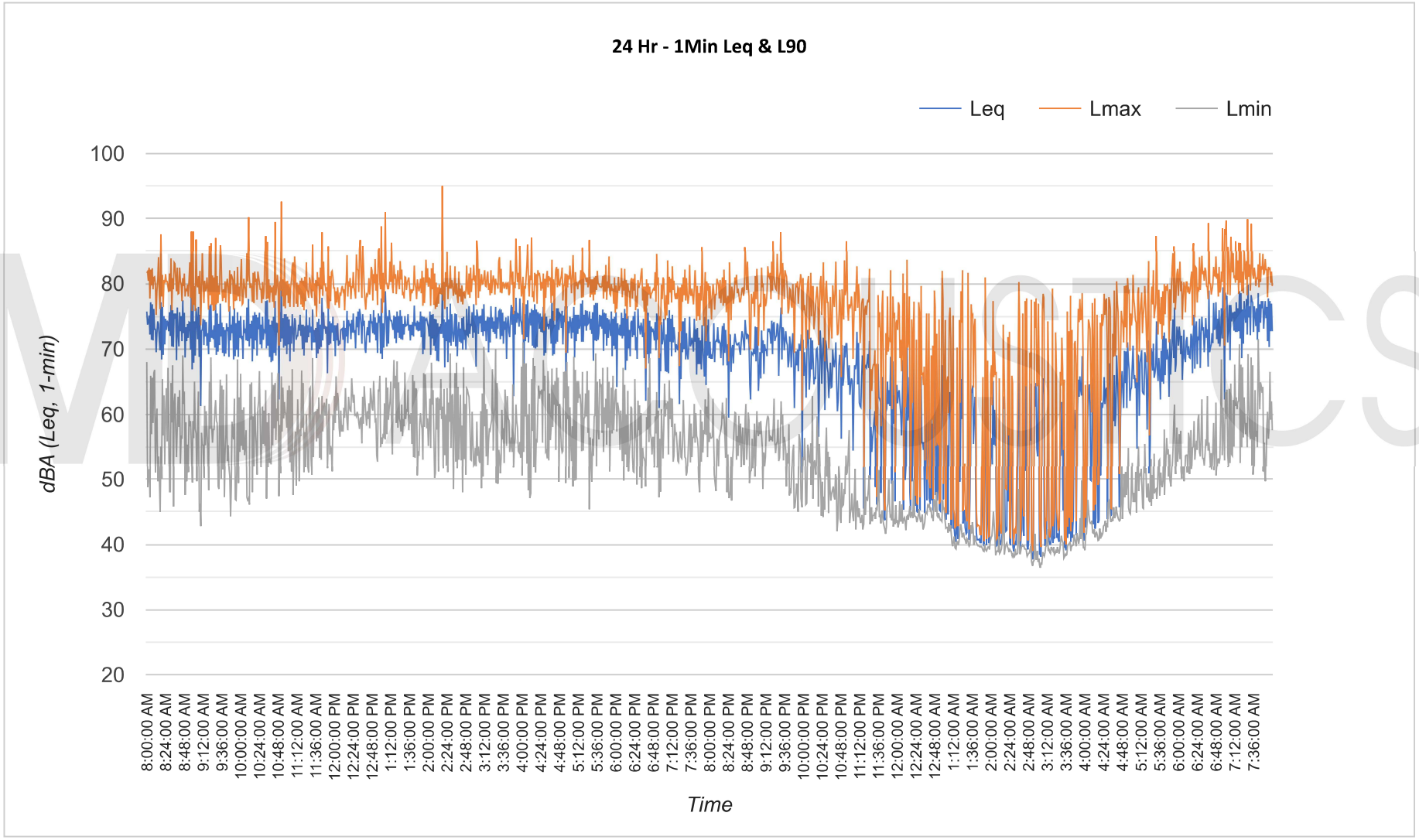
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys with road
Site Address/Location:	Laguna Niguel, CA	**Day:**	1 of 5
Site Id:	LT-2	**Meteorological Cond.:**	70F Sunny Winds 0-10Mph
		Noise Source(s) w/ Distance:	road noise and residential noise
		Ground Type:	Sandy soil and clay



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-2

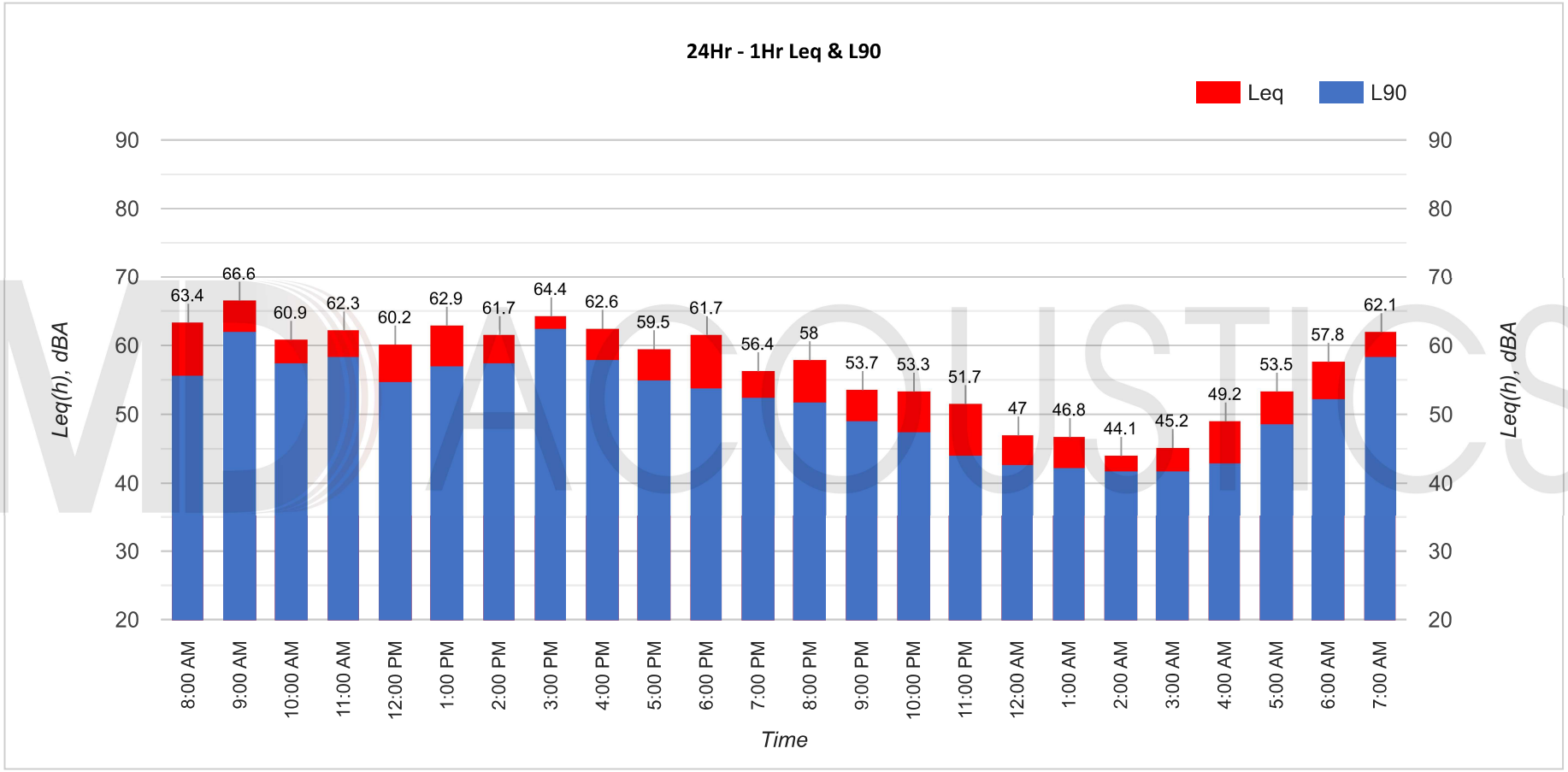
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys with road
Site Address/Location:	Laguna Niguel, CA	**Day:**	1 of 5
Site Id:	LT-2	**Meteorological Cond.:**	70F Sunny Winds 0-10Mph
		Noise Source(s) w/ Distance:	road noise and residential noise
		Ground Type:	Sandy soil and clay



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-3

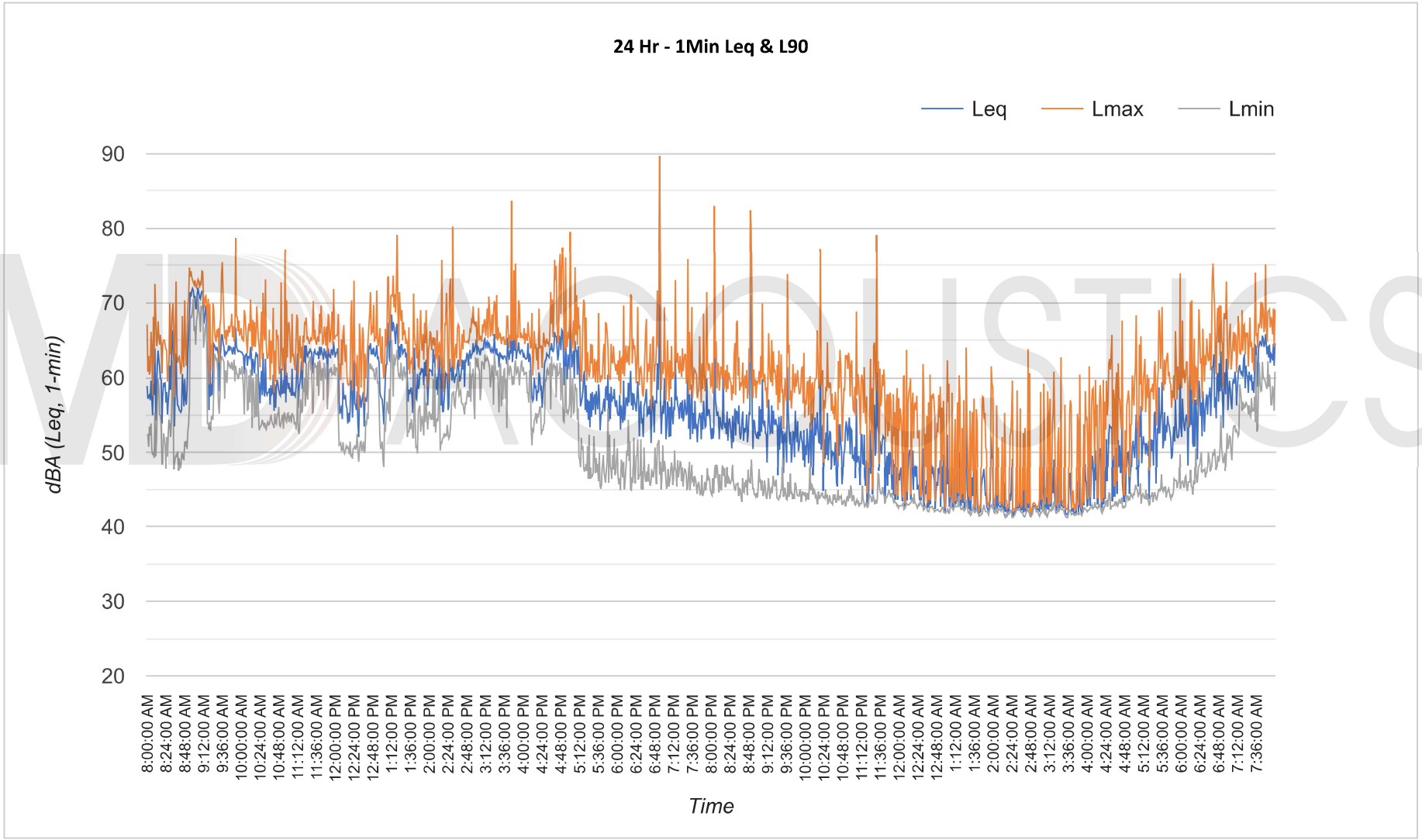
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys with road in l
Site Address/Location:	Laguna Niguel, CA	**Day:**	1 of 5
Site Id:	LT-3	**Noise Source(s) w/ Distance:**	road noise and residential noise
		Meteorological Cond.:	70F Sunny Winds 0-10Mph
		Ground Type:	Sandy soil and clay



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-3

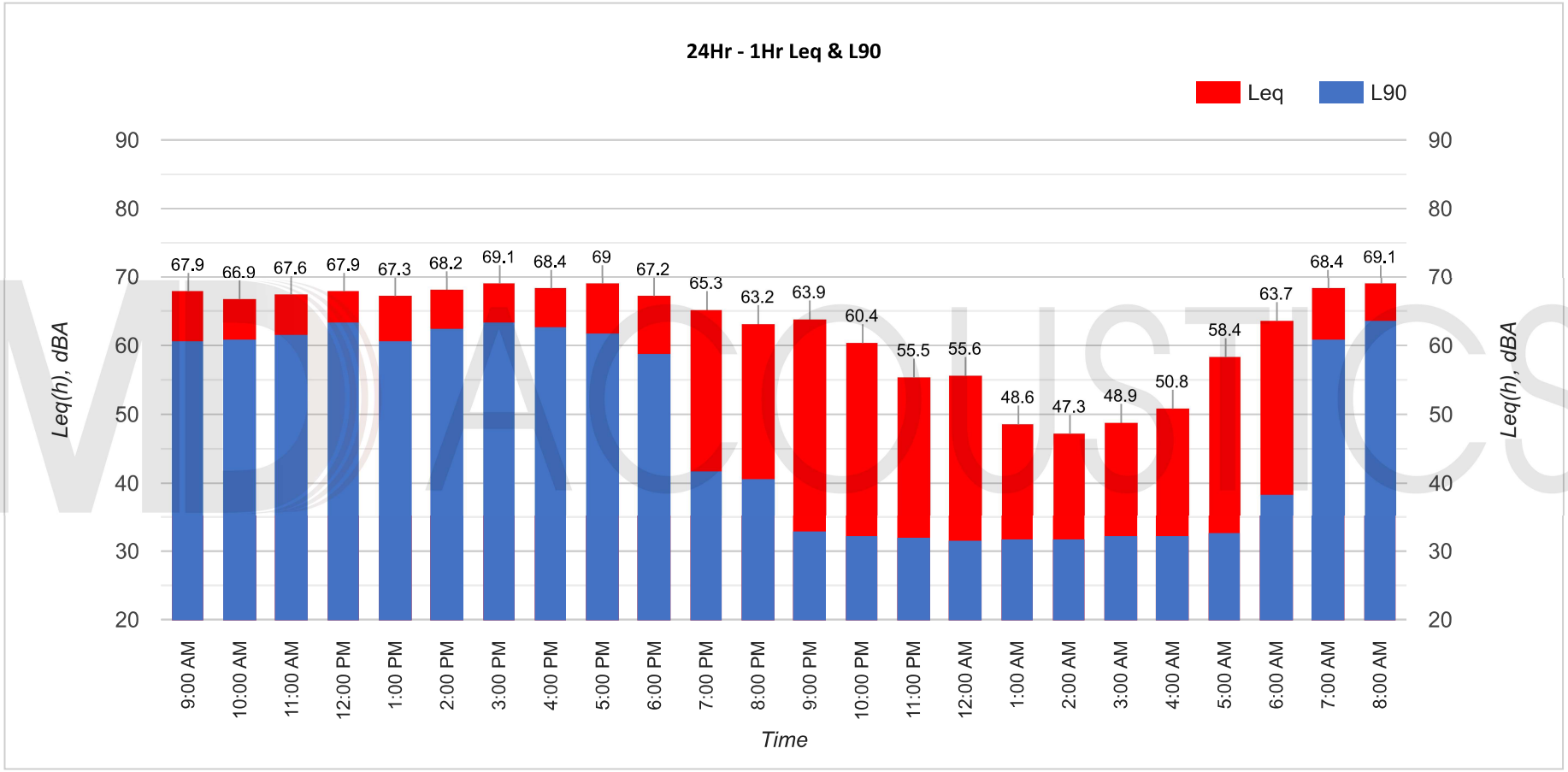
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys with road in l
Site Address/Location:	Laguna Niguel, CA	**Day:**	1 of 5
Site Id:	LT-3	**Meteorological Cond.:**	70F Sunny Winds 0-10Mph
		Noise Source(s) w/ Distance:	road noise and residential noise
		Ground Type:	Sandy soil and clay



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-4

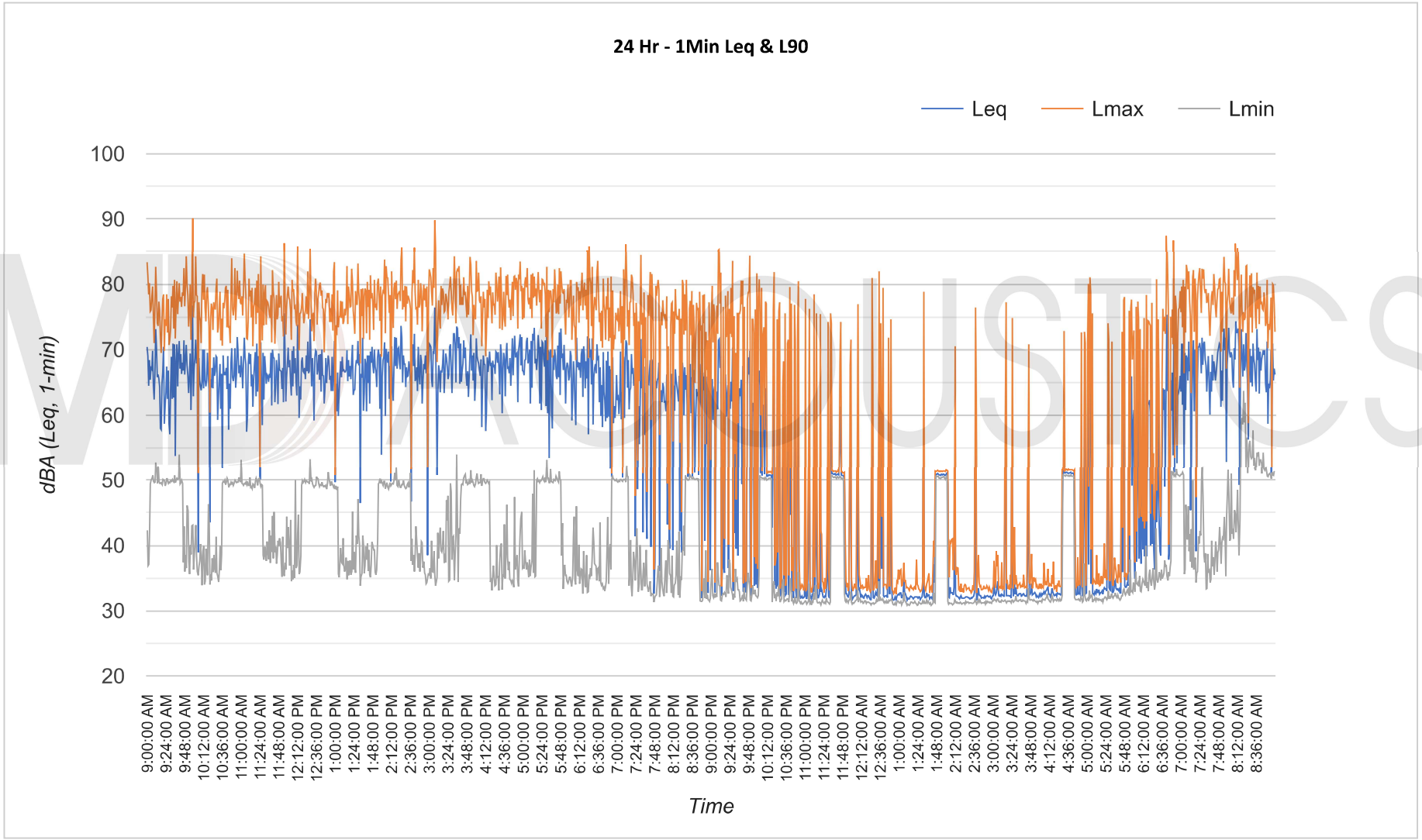
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys w/ roads in th	**Day:**	1 of 5
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**	70F Sunny Winds 0-10 Mph	**Noise Source(s) w/ Distance:**	road noise and residential noise
Site Id:	LT-4	**Ground Type:**	Sandy soil and clay		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-4

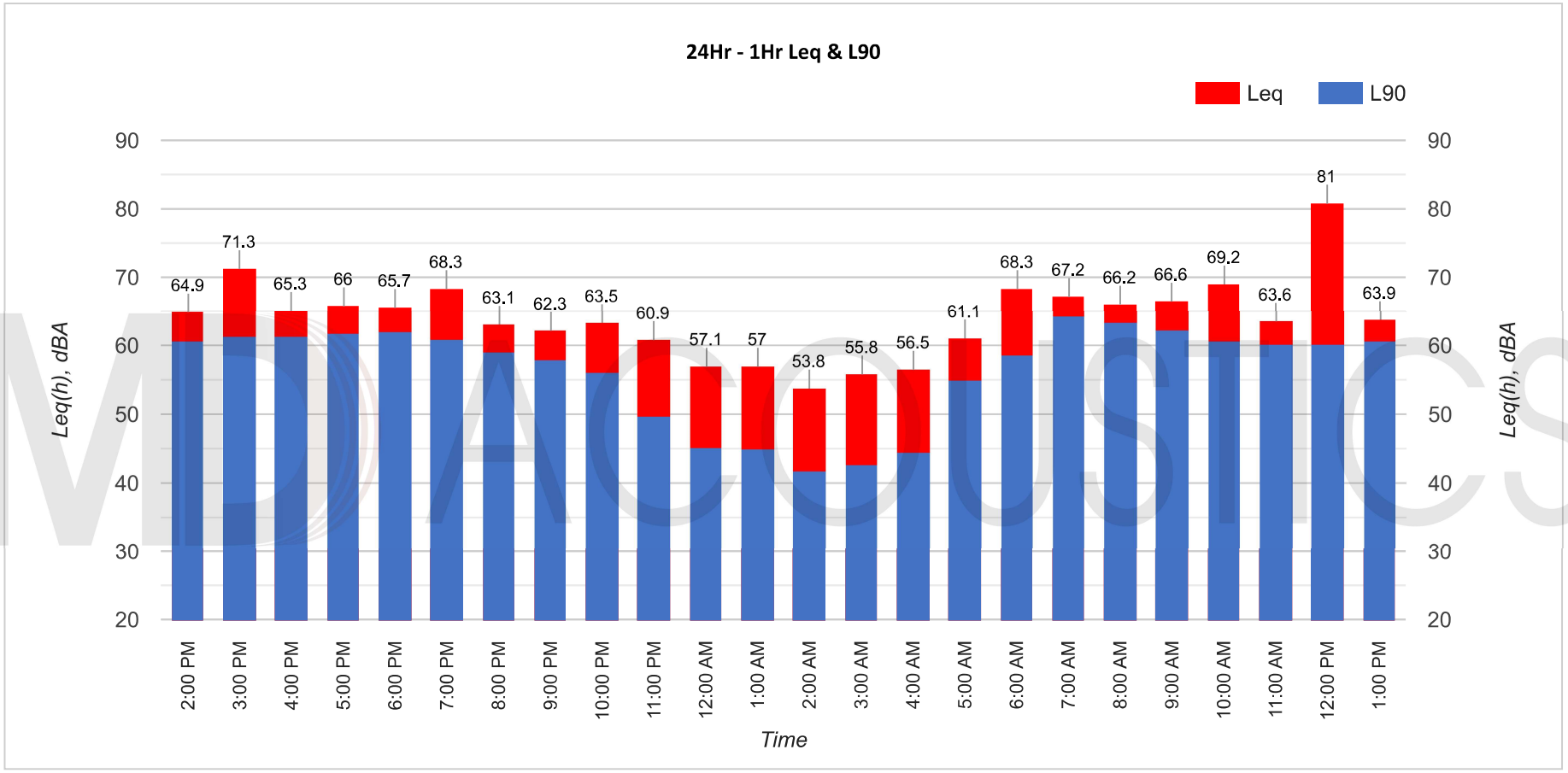
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys w/ roads in th	**Day:**	1 of 5
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**	70F Sunny Winds 0-10 Mph	**Noise Source(s) w/ Distance:**	road noise and residential noise
Site Id:	LT-4	**Ground Type:**	Sandy soil and clay		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-5

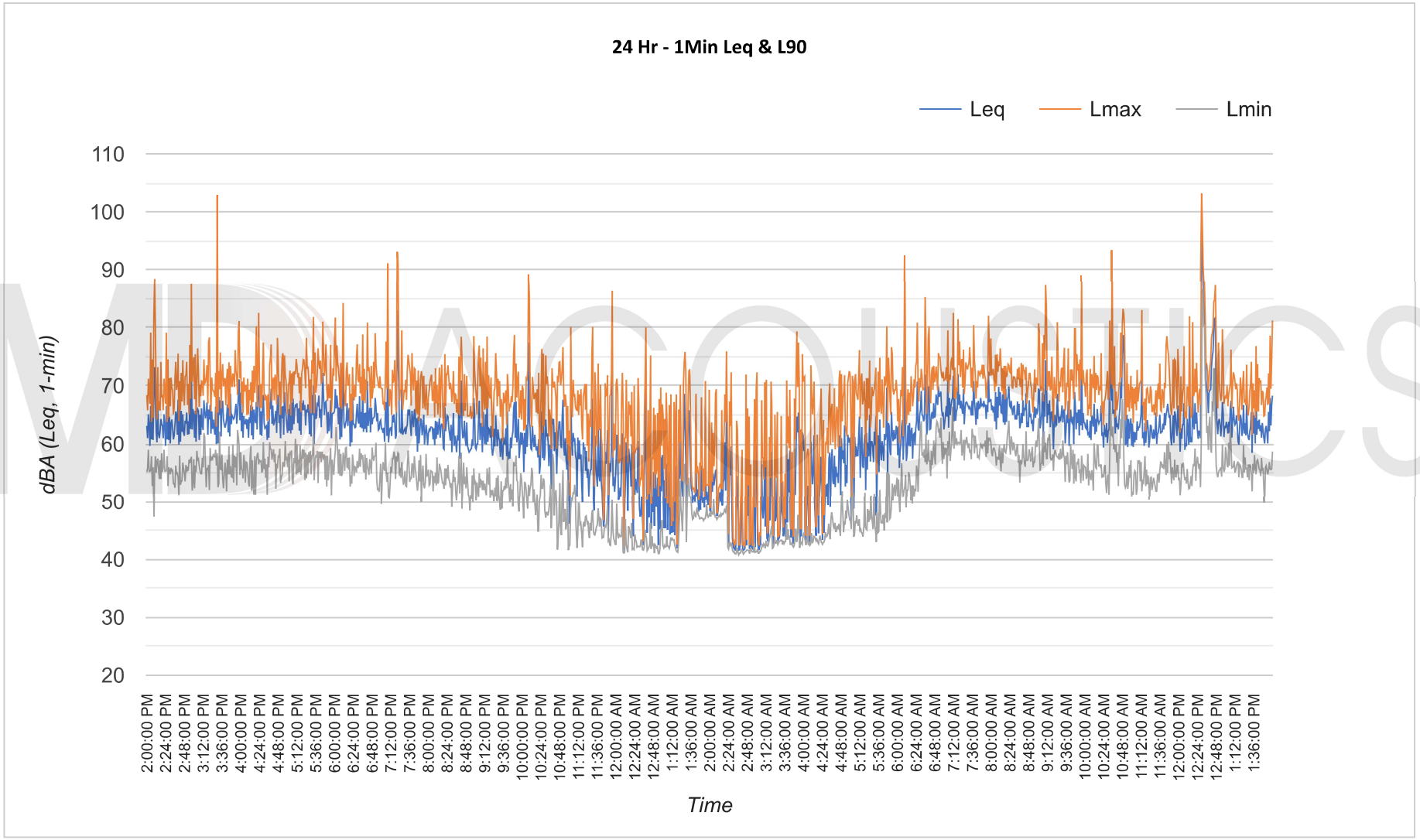
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys	**Day:** 1 of 5	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**	70F Sunny Winds 0-10 Mph	**Noise Source(s) w/ Distance:**	road noise and residential noise
Site Id:	LT-5	**Ground Type:**	Sandy soil and clay		



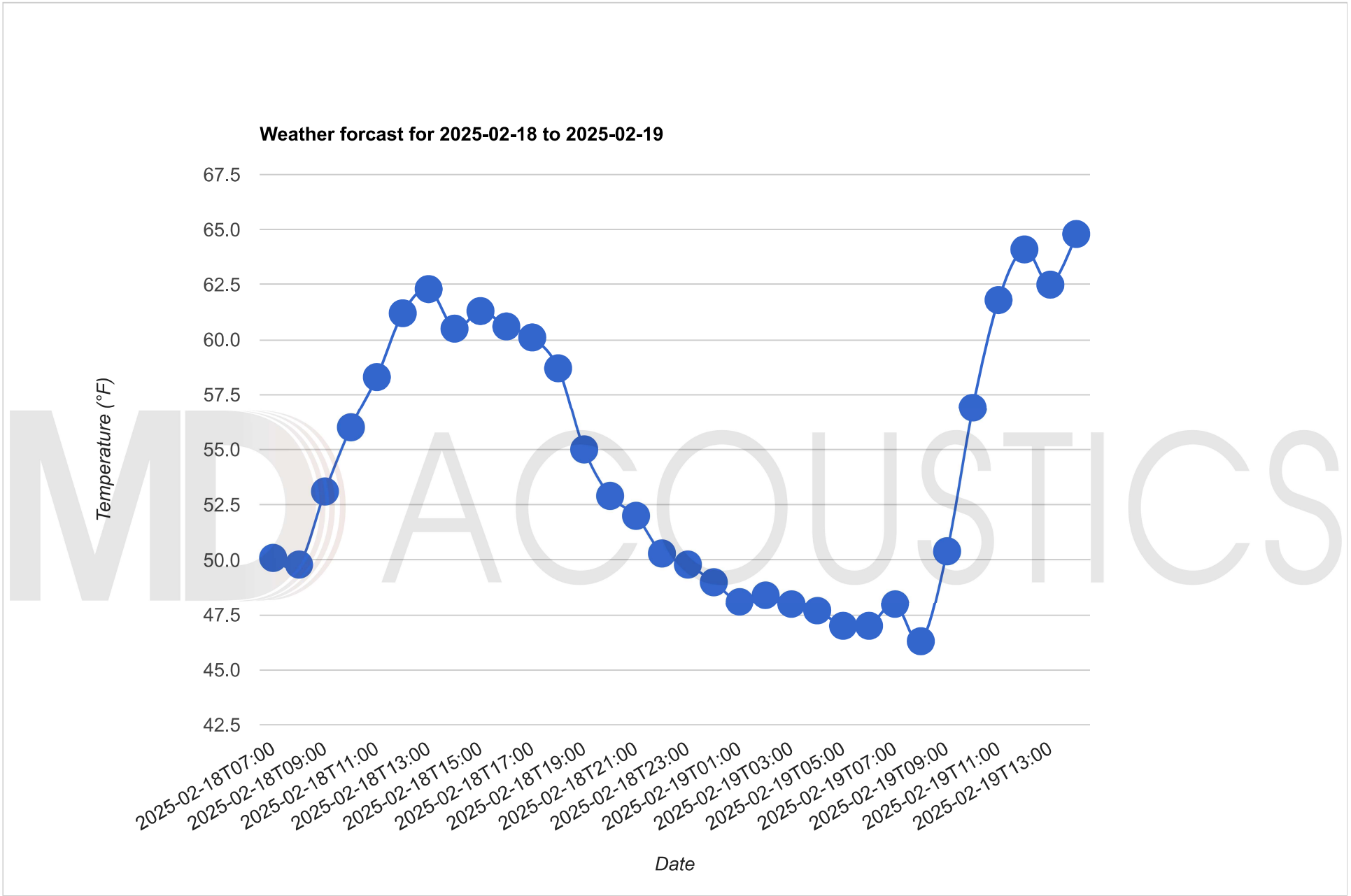
MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - LT-5

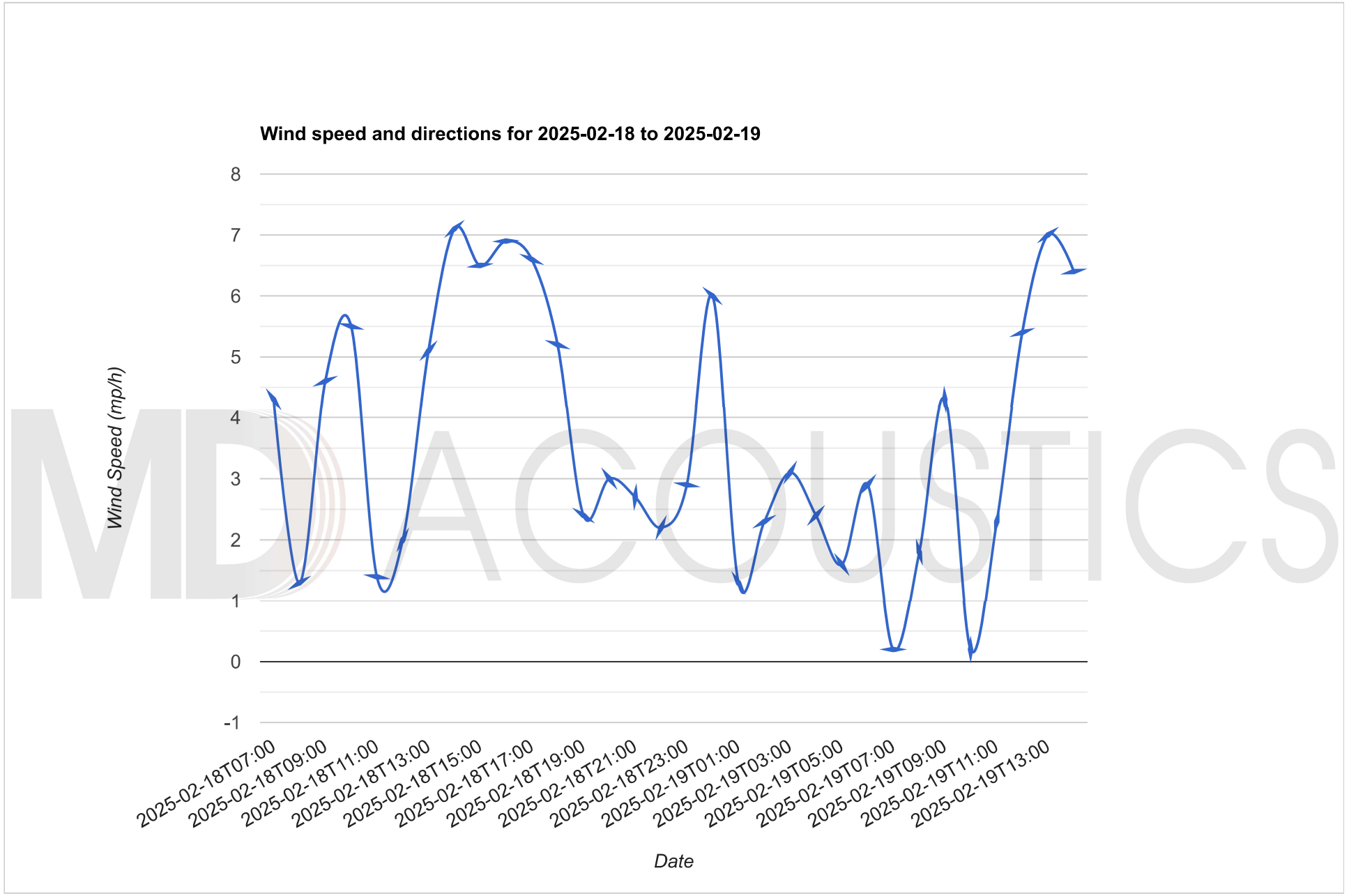
Project Name:	Laguna Niguel GPU Noise	**Site Topo:**	Hills and Valleys	**Day:** 1 of 5	
Site Address/Location:	Laguna Niguel, CA	**Meteorological Cond.:**	70F Sunny Winds 0-10 Mph	**Noise Source(s) w/ Distance:**	road noise and residential noise
Site Id:	LT-5	**Ground Type:**	Sandy soil and clay		



MD ACOUSTICS



MD ACOUSTICS



MD ACOUSTICS

Source: Global Forecast System (GFS) weather forcast model

Appendix C:
FHWA Roadway Noise Worksheets

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY A. Pacific Park Drive
SEGMENT Alicia Parkway to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	25,800
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,580

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.0	71.5	67.6	61.2	71.1	71.6
MEDIUM TRUCKS	64.1	62.6	56.2	54.7	63.1	63.3
HEAVY TRUCKS	64.6	63.2	54.2	55.4	63.8	63.9
VEHICULAR NOISE	74.1	72.6	68.1	62.9	72.4	**72.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	95	299	946	2992
LDN	86	272	860	2719

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY B. Alicia Parkway
SEGMENT Pacific Park Drive to Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,400
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,440

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.1	72.6	68.7	62.3	72.1	72.6
MEDIUM TRUCKS	64.5	63.0	56.7	55.1	63.6	63.8
HEAVY TRUCKS	64.8	63.4	54.3	55.6	63.9	64.1
VEHICULAR NOISE	75.0	73.5	69.1	63.7	73.2	**7 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	116	368	1165	3684
LDN	106	334	1056	3339

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY C. La Paz Road
SEGMENT Pacific Park Drive to Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	16,400
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,640

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.6	68.1	64.1	57.7	67.6	68.1
MEDIUM TRUCKS	61.3	59.8	53.4	51.9	60.3	60.6
HEAVY TRUCKS	62.2	60.8	51.7	53.0	61.3	61.4
VEHICULAR NOISE	70.8	69.3	64.7	59.8	69.1	**6 .6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	45	143	451	1426
LDN	41	130	411	1300

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY D. Moulton Parkway
SEGMENT Nort of Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	17,900
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,790

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.4	70.9	67.0	60.6	70.4	70.9
MEDIUM TRUCKS	62.8	61.3	55.0	53.4	61.9	62.1
HEAVY TRUCKS	63.1	61.7	52.6	53.9	62.3	62.4
VEHICULAR NOISE	73.3	71.8	67.4	62.1	71.6	**72.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	79	250	790	2498
LDN	72	226	716	2264

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY E. Alicia Parkway
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,700
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,470

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.8	72.3	68.4	62.0	71.8	72.3
MEDIUM TRUCKS	64.2	62.7	56.4	54.8	63.3	63.5
HEAVY TRUCKS	64.5	63.1	54.0	55.3	63.7	63.8
VEHICULAR NOISE	74.7	73.2	68.8	63.5	73.0	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	109	345	1090	3446
LDN	99	312	988	3124

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY F. La Paz Road
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,600
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,360

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.2	68.8	64.8	58.4	68.3	68.8
MEDIUM TRUCKS	61.3	59.8	53.4	51.9	60.3	60.6
HEAVY TRUCKS	61.8	60.4	51.4	52.6	61.0	61.1
VEHICULAR NOISE	71.3	69.8	65.3	60.1	69.6	**70.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	50	158	499	1577
LDN	45	143	453	1433

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY G. Moulton Parkway
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,980

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.8	71.4	67.4	61.0	70.9	71.4
MEDIUM TRUCKS	63.3	61.8	55.4	53.9	62.3	62.6
HEAVY TRUCKS	63.5	62.1	53.1	54.3	62.7	62.8
VEHICULAR NOISE	73.7	72.3	67.8	62.5	72.0	**72.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	87	276	874	2763
LDN	79	250	792	2504

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY H. Aliso Creek Road
SEGMENT Alicia Parkway to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	84
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,910

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	27.3	- -
MEDIUM TRUCKS=	4.00	27.1	- -
HEAVY TRUCKS =	8.01	27.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.8	71.3	67.3	60.9	70.8	71.3
MEDIUM TRUCKS	63.8	62.3	56.0	54.4	62.9	63.1
HEAVY TRUCKS	64.4	62.9	53.9	55.2	63.5	63.6
VEHICULAR NOISE	73.8	72.3	67.8	62.7	72.1	**72.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	89	283	894	2827
LDN	81	257	812	2569

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY I. Aliso Creek Road
SEGMENT La Paz Road to Moulton Parkway
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,100
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,210

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.4	65.9	62.0	55.6	65.5	66.0
MEDIUM TRUCKS	59.1	57.6	51.3	49.7	58.2	58.4
HEAVY TRUCKS	60.0	58.6	49.6	50.8	59.2	59.3
VEHICULAR NOISE	68.7	67.2	62.6	57.6	67.0	**67.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	27	87	275	869
LDN	25	79	250	792

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY J. Alicia Parkway
SEGMENT Aliso Creek Road to Hig lands Avenue
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,600
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,860

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.7	74.3	70.3	63.9	73.8	74.3
MEDIUM TRUCKS	66.2	64.7	58.3	56.8	65.2	65.5
HEAVY TRUCKS	66.4	65.0	56.0	57.2	65.6	65.7
VEHICULAR NOISE	76.6	75.2	70.7	65.4	74.9	**75.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	170	539	1703	5386
LDN	154	488	1544	4881

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY K. La Paz Road
SEGMENT Aliso Creek Road to Ranc o Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,300
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	46
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,230

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.5	- -
MEDIUM TRUCKS=	4.00	44.4	- -
HEAVY TRUCKS =	8.01	44.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.7	67.3	63.3	56.9	66.8	67.3
MEDIUM TRUCKS	59.8	58.3	51.9	50.4	58.8	59.1
HEAVY TRUCKS	60.3	58.9	49.9	51.1	59.5	59.6
VEHICULAR NOISE	69.8	68.3	63.8	58.6	68.1	**68.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	35	112	353	1116
LDN	32	101	321	1014

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY L. Moulton Parkway
SEGMENT Aliso Creek Road to Ranc o Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	28,400
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,840

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.7	73.3	69.3	62.9	72.8	73.3
MEDIUM TRUCKS	65.2	63.7	57.3	55.8	64.2	64.5
HEAVY TRUCKS	65.5	64.0	55.0	56.2	64.6	64.7
VEHICULAR NOISE	75.6	74.2	69.7	64.4	73.9	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	136	429	1356	4288
LDN	123	389	1229	3886

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY M. Ranc o Niguel Road
SEGMENT Moulton Parkway to Greenfield Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,200
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,520

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.1	64.6	60.7	54.3	64.2	64.7
MEDIUM TRUCKS	58.6	57.1	50.7	49.2	57.7	57.9
HEAVY TRUCKS	59.9	58.4	49.4	50.7	59.0	59.1
VEHICULAR NOISE	67.6	66.2	61.4	56.7	66.0	**66.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	22	69	218	690
LDN	20	63	200	631

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY N. Crown Valley Parkway
SEGMENT Greenfield Drive to Ca ot Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	39,200
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,920

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.8	73.4	69.4	63.0	72.9	73.4
MEDIUM TRUCKS	65.9	64.4	58.0	56.5	64.9	65.2
HEAVY TRUCKS	66.4	65.0	56.0	57.2	65.6	65.7
VEHICULAR NOISE	75.9	74.4	69.9	64.7	74.2	**7 .6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	144	455	1438	4546
LDN	131	413	1306	4130

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY O. Crown Valley Parkway
SEGMENT Ca ot Road to For es Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	58,500
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	94
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,850

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	17.3	- -
MEDIUM TRUCKS=	4.00	17.1	- -
HEAVY TRUCKS =	8.01	17.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	78.1	76.7	72.7	66.3	76.2	76.7
MEDIUM TRUCKS	69.9	68.4	62.0	60.5	68.9	69.2
HEAVY TRUCKS	70.7	69.3	60.3	61.5	69.9	70.0
VEHICULAR NOISE	79.4	77.9	73.3	68.3	77.7	**78.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	324	1024	3240	10244
LDN	295	934	2952	9336

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY P. Moulton Parkway
SEGMENT Ranc o Niguel Road to Crown Valley Parkway
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	18,500
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,850

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.9	71.4	67.5	61.1	70.9	71.4
MEDIUM TRUCKS	63.3	61.8	55.5	53.9	62.4	62.6
HEAVY TRUCKS	63.6	62.2	53.1	54.4	62.7	62.9
VEHICULAR NOISE	73.8	72.3	67.9	62.5	72.0	**72.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	88	279	883	2793
LDN	80	253	801	2531

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Crown Valley Parkway
SEGMENT Moulton Parkway/Golden Lantern to Greenfield Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	36,200
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,620

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.8	74.3	70.4	64.0	73.9	74.3
MEDIUM TRUCKS	66.2	64.7	58.4	56.8	65.3	65.5
HEAVY TRUCKS	66.5	65.1	56.0	57.3	65.7	65.8
VEHICULAR NOISE	76.7	75.2	70.8	65.5	75.0	**75.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	173	547	1728	5465
LDN	157	495	1566	4953

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY R. Paseo de Colinas
SEGMENT Golden Lantern to Ca ot Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	18,600
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,860

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.6	69.1	65.1	58.8	68.6	69.1
MEDIUM TRUCKS	61.6	60.1	53.8	52.2	60.7	60.9
HEAVY TRUCKS	62.2	60.8	51.7	53.0	61.3	61.5
VEHICULAR NOISE	71.6	70.2	65.6	60.5	69.9	**70.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	54	171	540	1709
LDN	49	155	491	1552

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY S. Paseo de Colinas
SEGMENT Ca ot Road and Camino Ca istrano
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,500
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,350

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.2	67.7	63.8	57.4	67.2	67.7
MEDIUM TRUCKS	60.2	58.7	52.4	50.8	59.3	59.5
HEAVY TRUCKS	60.8	59.4	50.3	51.6	59.9	60.1
VEHICULAR NOISE	70.2	68.8	64.2	59.1	68.5	**68.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	39	124	392	1240
LDN	36	113	356	1127

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY T. Alicia Parkway
SEGMENT Hig lands Avenue to Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,000
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,700

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.9	74.4	70.5	64.1	73.9	74.4
MEDIUM TRUCKS	66.3	64.8	58.5	56.9	65.4	65.6
HEAVY TRUCKS	66.6	65.2	56.1	57.4	65.7	65.9
VEHICULAR NOISE	76.8	75.3	70.9	65.6	75.1	**75.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	177	559	1766	5586
LDN	160	506	1601	5063

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY U. Crown Valley Parkway
SEGMENT La Paz Road to Moulton Parkway/Golden Lantern
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,700
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,770

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.3	71.8	67.9	61.5	71.4	71.9
MEDIUM TRUCKS	64.4	62.9	56.5	55.0	63.4	63.7
HEAVY TRUCKS	64.9	63.5	54.5	55.7	64.1	64.2
VEHICULAR NOISE	74.4	72.9	68.4	63.2	72.7	**7 .1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	102	321	1016	3213
LDN	92	292	923	2919

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY V. Golden Lantern
SEGMENT Crown Valley Parkway to Paseo de Colinas
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,400
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	68
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,240

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	36.8	- -
MEDIUM TRUCKS=	4.00	36.7	- -
HEAVY TRUCKS =	8.01	36.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.2	70.7	66.7	60.3	70.2	70.7
MEDIUM TRUCKS	63.2	61.7	55.3	53.8	62.3	62.5
HEAVY TRUCKS	63.8	62.3	53.3	54.6	62.9	63.0
VEHICULAR NOISE	73.2	71.7	67.2	62.1	71.5	**71.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	78	246	778	2460
LDN	71	223	707	2235

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY W. Crown Valley Parkway
SEGMENT Niguel Road to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,500
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,750

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.3	71.8	67.9	61.5	71.3	71.8
MEDIUM TRUCKS	64.3	62.8	56.5	54.9	63.4	63.6
HEAVY TRUCKS	64.9	63.5	54.4	55.7	64.0	64.2
VEHICULAR NOISE	74.3	72.9	68.3	63.2	72.6	**7 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	101	319	1009	3189
LDN	92	290	916	2898

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Golden Lantern
SEGMENT Paseo de Colinas to Marina Hills Drive/Camino Los Padres
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	34,300
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,430

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.2	72.8	68.8	62.4	72.3	72.8
MEDIUM TRUCKS	65.3	63.8	57.4	55.9	64.3	64.6
HEAVY TRUCKS	65.9	64.4	55.4	56.6	65.0	65.1
VEHICULAR NOISE	75.3	73.8	69.3	64.1	73.6	**7 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	126	398	1258	3978
LDN	114	361	1143	3614

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY Y. Crown Valley Parkway
SEGMENT Alicia Parkway to Clu House Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	23,400
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,340

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.8	72.3	68.4	62.0	71.8	72.3
MEDIUM TRUCKS	64.2	62.7	56.4	54.8	63.3	63.5
HEAVY TRUCKS	64.5	63.1	54.0	55.3	63.6	63.8
VEHICULAR NOISE	74.7	73.2	68.8	63.4	72.9	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	109	343	1086	3434
LDN	98	311	984	3112

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Niguel Road
SEGMENT Crown Valley Parkway to Marina Hills Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,900
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,990

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.4	67.9	64.0	57.6	67.4	67.9
MEDIUM TRUCKS	61.1	59.6	53.3	51.7	60.2	60.4
HEAVY TRUCKS	62.0	60.6	51.5	52.8	61.2	61.3
VEHICULAR NOISE	70.6	69.2	64.5	59.6	69.0	**6 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	43	137	434	1371
LDN	40	125	395	1249

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY AA. Pacific Island Drive
SEGMENT Clu House Drive to Starview Lane
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,300
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	430

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.2	62.7	58.8	52.4	62.3	62.8
MEDIUM TRUCKS	55.3	53.8	47.4	45.9	54.3	54.5
HEAVY TRUCKS	55.8	54.4	45.4	46.6	55.0	55.1
VEHICULAR NOISE	65.3	63.8	59.3	54.1	63.6	**6 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	12	39	125	395
LDN	11	36	113	359

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY BB. Niguel Road
SEGMENT Marina Hills Drive to Clu House Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,100
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,310

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.6	69.1	65.1	58.7	68.6	69.1
MEDIUM TRUCKS	61.0	59.5	53.1	51.6	60.0	60.3
HEAVY TRUCKS	61.3	59.8	50.8	52.1	60.4	60.5
VEHICULAR NOISE	71.4	70.0	65.5	60.2	69.7	**70.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	52	163	516	1632
LDN	47	148	468	1480

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY CC. Golden Lantern
SEGMENT C a arosa Park Road to Beacon Hill Way
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	20,400
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,040

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.4	70.9	66.9	60.5	70.4	70.9
MEDIUM TRUCKS	62.8	61.3	54.9	53.4	61.8	62.1
HEAVY TRUCKS	63.1	61.6	52.6	53.9	62.2	62.3
VEHICULAR NOISE	73.2	71.8	67.3	62.0	71.5	**71.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	78	247	781	2471
LDN	71	224	708	2240

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY DD. Crown Valley Parkway
SEGMENT Clu House Drive to Pacific Island Drive/Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,900
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,690

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.5	73.0	69.1	62.7	72.6	73.1
MEDIUM TRUCKS	65.0	63.5	57.1	55.5	64.0	64.2
HEAVY TRUCKS	65.2	63.8	54.8	56.0	64.4	64.5
VEHICULAR NOISE	75.4	73.9	69.5	64.2	73.7	**7 .1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	128	406	1284	4061
LDN	116	368	1164	3681

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY EE. Niguel Road
SEGMENT Ridgeway Avenue to Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,500
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,350

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.5	69.0	65.1	58.7	68.6	69.1
MEDIUM TRUCKS	60.9	59.4	53.1	51.5	60.0	60.2
HEAVY TRUCKS	61.2	59.8	50.8	52.0	60.4	60.5
VEHICULAR NOISE	71.4	69.9	65.5	60.2	69.7	**70.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	51	161	510	1614
LDN	46	146	463	1463

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY FF. Golden Lantern
SEGMENT Beacon Hill Way to Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,100
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,910

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.9	71.4	67.5	61.1	70.9	71.4
MEDIUM TRUCKS	63.3	61.8	55.5	53.9	62.4	62.6
HEAVY TRUCKS	63.6	62.2	53.1	54.4	62.8	62.9
VEHICULAR NOISE	73.8	72.3	67.9	62.6	72.1	**72.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	89	280	886	2803
LDN	80	254	803	2540

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY GG. Camino Del Avion
SEGMENT Crown Valley Parkway to Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,200
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,120

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.2	66.8	62.8	56.4	66.3	66.8
MEDIUM TRUCKS	59.3	57.8	51.4	49.9	58.3	58.6
HEAVY TRUCKS	59.8	58.4	49.4	50.6	59.0	59.1
VEHICULAR NOISE	69.3	67.8	63.3	58.1	67.6	**68.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	31	99	315	995
LDN	29	90	286	904

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY HH. Camino Del Avion
SEGMENT Niguel Road to Golden Lantern
LOCATION: City of Laguna Niguel, CA SCENARIO: Existing

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	16,500
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,650

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.9	68.4	64.5	58.1	68.0	68.5
MEDIUM TRUCKS	61.0	59.5	53.1	51.5	60.0	60.2
HEAVY TRUCKS	61.5	60.1	51.1	52.3	60.7	60.8
VEHICULAR NOISE	71.0	69.5	65.0	59.8	69.3	**6 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	46	147	463	1465
LDN	42	133	421	1331

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY A. Pacific Park Drive
SEGMENT Alicia Parkway to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	34,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,410

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.2	72.8	68.8	62.4	72.3	72.8
MEDIUM TRUCKS	65.3	63.8	57.4	55.9	64.3	64.6
HEAVY TRUCKS	65.8	64.4	55.4	56.6	65.0	65.1
VEHICULAR NOISE	75.3	73.8	69.3	64.1	73.6	**7 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	125	395	1251	3955
LDN	114	359	1136	3593

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY B. Alicia Parkway
SEGMENT Pacific Park Drive to Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,600
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,460

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.1	72.7	68.7	62.3	72.2	72.7
MEDIUM TRUCKS	64.6	63.1	56.7	55.2	63.6	63.9
HEAVY TRUCKS	64.8	63.4	54.4	55.6	64.0	64.1
VEHICULAR NOISE	75.0	73.5	69.1	63.8	73.3	**7 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	117	371	1174	3714
LDN	106	337	1064	3366

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY C. La Paz Road
SEGMENT Pacific Park Drive to Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,300
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,930

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.3	68.8	64.8	58.5	68.3	68.8
MEDIUM TRUCKS	62.0	60.5	54.1	52.6	61.1	61.3
HEAVY TRUCKS	62.9	61.5	52.4	53.7	62.0	62.2
VEHICULAR NOISE	71.5	70.1	65.4	60.5	69.9	**70.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	53	168	531	1679
LDN	48	153	484	1530

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY D. Moulton Parkway
SEGMENT Nort of Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,980

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.8	71.4	67.4	61.0	70.9	71.4
MEDIUM TRUCKS	63.3	61.8	55.4	53.9	62.3	62.6
HEAVY TRUCKS	63.5	62.1	53.1	54.3	62.7	62.8
VEHICULAR NOISE	73.7	72.3	67.8	62.5	72.0	**72.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	87	276	874	2763
LDN	79	250	792	2504

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY E. Alicia Parkway
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,500
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,450

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.8	72.3	68.3	61.9	71.8	72.3
MEDIUM TRUCKS	64.2	62.7	56.3	54.8	63.3	63.5
HEAVY TRUCKS	64.5	63.0	54.0	55.3	63.6	63.7
VEHICULAR NOISE	74.7	73.2	68.7	63.4	72.9	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	108	342	1081	3418
LDN	98	310	980	3098

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY F. La Paz Road
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,410

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.4	68.9	65.0	58.6	68.4	68.9
MEDIUM TRUCKS	61.4	59.9	53.6	52.0	60.5	60.7
HEAVY TRUCKS	62.0	60.6	51.5	52.8	61.1	61.3
VEHICULAR NOISE	71.4	70.0	65.4	60.3	69.7	**70.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	52	164	517	1635
LDN	47	149	470	1486

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY G. Moulton Parkway
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,000
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,200

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.3	71.8	67.9	61.5	71.3	71.8
MEDIUM TRUCKS	63.7	62.2	55.9	54.3	62.8	63.0
HEAVY TRUCKS	64.0	62.6	53.5	54.8	63.1	63.3
VEHICULAR NOISE	74.2	72.7	68.3	63.0	72.5	**72.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	97	307	971	3070
LDN	88	278	880	2782

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY H. Aliso Creek Road
SEGMENT Alicia Parkway to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,000
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	84
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,700

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	27.3	- -
MEDIUM TRUCKS=	4.00	27.1	- -
HEAVY TRUCKS =	8.01	27.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.3	72.8	68.8	62.4	72.3	72.8
MEDIUM TRUCKS	65.3	63.8	57.5	55.9	64.4	64.6
HEAVY TRUCKS	65.9	64.4	55.4	56.7	65.0	65.1
VEHICULAR NOISE	75.3	73.8	69.3	64.2	73.6	**7 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	126	400	1264	3997
LDN	115	363	1148	3631

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY I. Aliso Creek Road
SEGMENT La Paz Road to Moulton Parkway
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	18,100
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,810

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.2	67.7	63.7	57.3	67.2	67.7
MEDIUM TRUCKS	60.9	59.4	53.0	51.5	59.9	60.2
HEAVY TRUCKS	61.8	60.3	51.3	52.6	60.9	61.0
VEHICULAR NOISE	70.4	68.9	64.3	59.4	68.7	**6 .1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	41	130	411	1299
LDN	37	118	374	1184

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY J. Alicia Parkway
SEGMENT Aliso Creek Road to Hig lands Avenue
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	39,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,980

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.9	74.4	70.4	64.0	73.9	74.4
MEDIUM TRUCKS	66.3	64.8	58.4	56.9	65.4	65.6
HEAVY TRUCKS	66.6	65.2	56.1	57.4	65.7	65.8
VEHICULAR NOISE	76.8	75.3	70.9	65.5	75.0	**75.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	176	555	1756	5553
LDN	159	503	1592	5033

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY K. La Paz Road
SEGMENT Aliso Creek Road to Ranc o Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,900
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	46
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,390

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.5	- -
MEDIUM TRUCKS=	4.00	44.4	- -
HEAVY TRUCKS =	8.01	44.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.3	67.8	63.8	57.4	67.3	67.8
MEDIUM TRUCKS	60.3	58.8	52.4	50.9	59.4	59.6
HEAVY TRUCKS	60.9	59.4	50.4	51.7	60.0	60.1
VEHICULAR NOISE	70.3	68.8	64.3	59.2	68.6	**6 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	40	126	399	1262
LDN	36	115	362	1146

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY L. Moulton Parkway
SEGMENT Aliso Creek Road to Ranc o Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	36,500
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,650

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.8	74.4	70.4	64.0	73.9	74.4
MEDIUM TRUCKS	66.3	64.8	58.4	56.9	65.3	65.6
HEAVY TRUCKS	66.5	65.1	56.1	57.3	65.7	65.8
VEHICULAR NOISE	76.7	75.3	70.8	65.5	75.0	**75.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	174	551	1743	5511
LDN	158	499	1579	4994

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY M. Ranc o Niguel Road
SEGMENT Moulton Parkway to Greenfield Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	16,000
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,600

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.3	64.9	60.9	54.5	64.4	64.9
MEDIUM TRUCKS	58.8	57.3	51.0	49.4	57.9	58.1
HEAVY TRUCKS	60.1	58.7	49.6	50.9	59.2	59.4
VEHICULAR NOISE	67.8	66.4	61.6	56.9	66.2	**66.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	23	73	230	726
LDN	21	66	210	664

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY N. Crown Valley Parkway
SEGMENT Greenfield Drive to Ca ot Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,700
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,770

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.7	73.2	69.2	62.8	72.7	73.2
MEDIUM TRUCKS	65.7	64.2	57.8	56.3	64.8	65.0
HEAVY TRUCKS	66.3	64.8	55.8	57.1	65.4	65.5
VEHICULAR NOISE	75.7	74.2	69.7	64.6	74.0	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	138	437	1383	4372
LDN	126	397	1256	3972

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY O. Crown Valley Parkway
SEGMENT Ca ot Road to For es Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	56,300
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	94
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,630

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	17.3	- -
MEDIUM TRUCKS=	4.00	17.1	- -
HEAVY TRUCKS =	8.01	17.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	78.0	76.5	72.5	66.1	76.0	76.5
MEDIUM TRUCKS	69.7	68.2	61.9	60.3	68.8	69.0
HEAVY TRUCKS	70.6	69.1	60.1	61.4	69.7	69.8
VEHICULAR NOISE	79.2	77.7	73.1	68.2	77.5	**77.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	312	986	3118	9859
LDN	284	898	2841	8984

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY P. Moulton Parkway
SEGMENT Ranc o Niguel Road to Crown Valley Parkway
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,000
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,600

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.4	72.9	68.9	62.5	72.4	72.9
MEDIUM TRUCKS	64.8	63.3	56.9	55.4	63.9	64.1
HEAVY TRUCKS	65.1	63.6	54.6	55.9	64.2	64.3
VEHICULAR NOISE	75.3	73.8	69.3	64.0	73.5	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	124	393	1241	3925
LDN	113	356	1125	3558

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Crown Valley Parkway
SEGMENT Moulton Parkway/Golden Lantern to Greenfield Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	32,900
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,290

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.4	73.9	70.0	63.6	73.4	73.9
MEDIUM TRUCKS	65.8	64.3	58.0	56.4	64.9	65.1
HEAVY TRUCKS	66.1	64.7	55.6	56.9	65.2	65.4
VEHICULAR NOISE	76.3	74.8	70.4	65.0	74.5	**75.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	157	497	1571	4967
LDN	142	450	1424	4502

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY R. Paseo de Colinas
SEGMENT Golden Lantern to Ca ot Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,900
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,590

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.9	68.4	64.5	58.1	67.9	68.4
MEDIUM TRUCKS	60.9	59.4	53.1	51.5	60.0	60.2
HEAVY TRUCKS	61.5	60.1	51.0	52.3	60.6	60.8
VEHICULAR NOISE	70.9	69.5	65.0	59.8	69.2	**6 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	46	146	462	1461
LDN	42	133	420	1327

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY S. Paseo de Colinas
SEGMENT Ca ot Road and Camino Ca istrano
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,500
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,450

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.5	68.0	64.1	57.7	67.5	68.0
MEDIUM TRUCKS	60.5	59.0	52.7	51.1	59.6	59.8
HEAVY TRUCKS	61.1	59.7	50.6	51.9	60.2	60.4
VEHICULAR NOISE	70.5	69.1	64.6	59.4	68.8	**6 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	42	133	421	1332
LDN	38	121	383	1210

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY T. Alicia Parkway
SEGMENT Hig lands Avenue to Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,780

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	76.0	74.5	70.6	64.2	74.0	74.5
MEDIUM TRUCKS	66.4	64.9	58.6	57.0	65.5	65.7
HEAVY TRUCKS	66.7	65.3	56.2	57.5	65.8	66.0
VEHICULAR NOISE	76.9	75.4	71.0	65.6	75.1	**75.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	180	571	1805	5707
LDN	164	517	1636	5172

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY U. Crown Valley Parkway
SEGMENT La Paz Road to Moulton Parkway/Golden Lantern
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,800
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,680

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.2	71.7	67.7	61.3	71.2	71.7
MEDIUM TRUCKS	64.2	62.7	56.4	54.8	63.3	63.5
HEAVY TRUCKS	64.8	63.4	54.3	55.6	63.9	64.1
VEHICULAR NOISE	74.2	72.8	68.2	63.1	72.5	**72.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	98	311	983	3108
LDN	89	282	893	2824

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY V. Golden Lantern
SEGMENT Crown Valley Parkway to Paseo de Colinas
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,600
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	68
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,760

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	36.8	- -
MEDIUM TRUCKS=	4.00	36.7	- -
HEAVY TRUCKS =	8.01	36.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.1	71.6	67.6	61.2	71.1	71.6
MEDIUM TRUCKS	64.1	62.6	56.2	54.7	63.2	63.4
HEAVY TRUCKS	64.7	63.2	54.2	55.5	63.8	63.9
VEHICULAR NOISE	74.1	72.6	68.1	63.0	72.4	**72.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	96	303	958	3031
LDN	87	275	871	2753

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY W. Crown Valley Parkway
SEGMENT Niguel Road to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,710

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.2	71.8	67.8	61.4	71.3	71.8
MEDIUM TRUCKS	64.3	62.8	56.4	54.9	63.3	63.6
HEAVY TRUCKS	64.8	63.4	54.4	55.6	64.0	64.1
VEHICULAR NOISE	74.3	72.8	68.3	63.1	72.6	**7 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	99	314	994	3143
LDN	90	286	903	2855

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Golden Lantern
SEGMENT Paseo de Colinas to Marina Hills Drive/Camino Los Padres
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	31,700
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,170

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.9	72.4	68.5	62.1	72.0	72.5
MEDIUM TRUCKS	65.0	63.5	57.1	55.5	64.0	64.2
HEAVY TRUCKS	65.5	64.1	55.1	56.3	64.7	64.8
VEHICULAR NOISE	75.0	73.5	69.0	63.8	73.2	**7 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	116	368	1163	3676
LDN	106	334	1056	3340

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY Y. Crown Valley Parkway
SEGMENT Alicia Parkway to Clu House Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	25,900
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,590

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.2	72.8	68.8	62.4	72.3	72.8
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.7	64.0
HEAVY TRUCKS	64.9	63.5	54.5	55.7	64.1	64.2
VEHICULAR NOISE	75.1	73.6	69.2	63.9	73.4	**7 .8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	120	380	1202	3801
LDN	109	344	1089	3445

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Niguel Road
SEGMENT Crown Valley Parkway to Marina Hills Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	20,800
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,080

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.6	68.1	64.2	57.8	67.6	68.1
MEDIUM TRUCKS	61.3	59.8	53.4	51.9	60.4	60.6
HEAVY TRUCKS	62.2	60.8	51.7	53.0	61.3	61.5
VEHICULAR NOISE	70.8	69.4	64.7	59.8	69.2	**6 .6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	45	143	453	1433
LDN	41	131	413	1306

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY AA. Pacific Island Drive
SEGMENT Clu House Drive to Starview Lane
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,500
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	450

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.4	62.9	59.0	52.6	62.5	63.0
MEDIUM TRUCKS	55.5	54.0	47.6	46.0	54.5	54.7
HEAVY TRUCKS	56.0	54.6	45.6	46.8	55.2	55.3
VEHICULAR NOISE	65.5	64.0	59.5	54.3	63.8	**6 .2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	41	131	413
LDN	12	38	119	376

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY BB. Niguel Road
SEGMENT Marina Hills Drive to Clu House Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,300
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,230

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.3	68.8	64.8	58.5	68.3	68.8
MEDIUM TRUCKS	60.7	59.2	52.9	51.3	59.8	60.0
HEAVY TRUCKS	61.0	59.6	50.5	51.8	60.1	60.3
VEHICULAR NOISE	71.2	69.7	65.3	59.9	69.4	**6 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	48	153	485	1533
LDN	44	139	439	1389

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY CC. Golden Lantern
SEGMENT C a arosa Park Road to Beacon Hill Way
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,000
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,700

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.6	72.1	68.1	61.7	71.6	72.1
MEDIUM TRUCKS	64.0	62.5	56.1	54.6	63.1	63.3
HEAVY TRUCKS	64.3	62.9	53.8	55.1	63.4	63.6
VEHICULAR NOISE	74.5	73.0	68.6	63.2	72.7	**7 .2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	103	327	1034	3270
LDN	94	296	937	2964

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY DD. Crown Valley Parkway
SEGMENT Clu House Drive to Pacific Island Drive/Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,900
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,690

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.5	73.0	69.1	62.7	72.6	73.1
MEDIUM TRUCKS	65.0	63.5	57.1	55.5	64.0	64.2
HEAVY TRUCKS	65.2	63.8	54.8	56.0	64.4	64.5
VEHICULAR NOISE	75.4	73.9	69.5	64.2	73.7	**7 .1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	128	406	1284	4061
LDN	116	368	1164	3681

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY EE. Niguel Road
SEGMENT Ridgeway Avenue to Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,280

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.3	68.8	64.8	58.4	68.3	68.8
MEDIUM TRUCKS	60.7	59.2	52.8	51.3	59.8	60.0
HEAVY TRUCKS	61.0	59.6	50.5	51.8	60.1	60.3
VEHICULAR NOISE	71.2	69.7	65.3	59.9	69.4	**6 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	48	153	484	1531
LDN	44	139	439	1387

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY FF. Golden Lantern
SEGMENT Beacon Hill Way to Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	23,900
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,390

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.9	72.4	68.4	62.0	71.9	72.4
MEDIUM TRUCKS	64.3	62.8	56.5	54.9	63.4	63.6
HEAVY TRUCKS	64.6	63.2	54.1	55.4	63.7	63.9
VEHICULAR NOISE	74.8	73.3	68.9	63.5	73.0	**7 .5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	111	351	1109	3507
LDN	101	318	1005	3179

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY GG. Camino Del Avion
SEGMENT Crown Valley Parkway to Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,110

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.2	66.7	62.8	56.4	66.2	66.7
MEDIUM TRUCKS	59.2	57.7	51.4	49.8	58.3	58.5
HEAVY TRUCKS	59.8	58.4	49.3	50.6	58.9	59.1
VEHICULAR NOISE	69.2	67.8	63.2	58.1	67.5	**67.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	31	99	312	986
LDN	28	90	283	896

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY HH. Camino Del Avion
SEGMENT Niguel Road to Golden Lantern
LOCATION: City of Laguna Niguel, CA SCENARIO: Current General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	17,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,710

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.1	68.6	64.6	58.2	68.1	68.6
MEDIUM TRUCKS	61.1	59.6	53.2	51.7	60.2	60.4
HEAVY TRUCKS	61.7	60.2	51.2	52.5	60.8	60.9
VEHICULAR NOISE	71.1	69.6	65.1	60.0	69.4	**6 .8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	48	152	480	1519
LDN	44	138	436	1380

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY A. Pacific Park Drive
SEGMENT Alicia Parkway to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	32,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,210

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.0	72.5	68.5	62.1	72.0	72.5
MEDIUM TRUCKS	65.0	63.5	57.1	55.6	64.1	64.3
HEAVY TRUCKS	65.6	64.1	55.1	56.4	64.7	64.8
VEHICULAR NOISE	75.0	73.5	69.0	63.9	73.3	**7 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	118	372	1177	3723
LDN	107	338	1070	3382

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY B. Alicia Parkway
SEGMENT Pacific Park Drive to Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,700
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,470

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.1	72.7	68.7	62.3	72.2	72.7
MEDIUM TRUCKS	64.6	63.1	56.7	55.2	63.6	63.9
HEAVY TRUCKS	64.8	63.4	54.4	55.6	64.0	64.1
VEHICULAR NOISE	75.0	73.6	69.1	63.8	73.3	**7 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	118	373	1179	3729
LDN	107	338	1069	3380

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY C. La Paz Road
SEGMENT Pacific Park Drive to Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	17,800
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,780

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.9	68.5	64.5	58.1	68.0	68.5
MEDIUM TRUCKS	61.7	60.1	53.8	52.2	60.7	60.9
HEAVY TRUCKS	62.5	61.1	52.1	53.3	61.7	61.8
VEHICULAR NOISE	71.2	69.7	65.1	60.1	69.5	**6 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	49	155	490	1548
LDN	45	141	446	1411

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY D. Moulton Parkway
SEGMENT Nort of Avila Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	20,600
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,060

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.0	71.5	67.6	61.2	71.1	71.6
MEDIUM TRUCKS	63.5	61.9	55.6	54.0	62.5	62.7
HEAVY TRUCKS	63.7	62.3	53.3	54.5	62.9	63.0
VEHICULAR NOISE	73.9	72.4	68.0	62.7	72.2	**72.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	91	287	909	2874
LDN	82	261	824	2605

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY E. Alicia Parkway
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,900
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,490

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.8	72.4	68.4	62.0	71.9	72.4
MEDIUM TRUCKS	64.3	62.8	56.4	54.9	63.3	63.6
HEAVY TRUCKS	64.5	63.1	54.1	55.3	63.7	63.8
VEHICULAR NOISE	74.7	73.3	68.8	63.5	73.0	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	110	347	1099	3474
LDN	100	315	996	3149

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY F. La Paz Road
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,700
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,270

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.9	68.5	64.5	58.1	68.0	68.5
MEDIUM TRUCKS	61.0	59.5	53.1	51.6	60.0	60.3
HEAVY TRUCKS	61.5	60.1	51.1	52.3	60.7	60.8
VEHICULAR NOISE	71.0	69.5	65.0	59.8	69.3	**6 .7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	47	147	466	1473
LDN	42	134	423	1338

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY G. Moulton Parkway
SEGMENT Avila Road to Aliso Creek Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,600
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,260

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.4	71.9	68.0	61.6	71.5	72.0
MEDIUM TRUCKS	63.9	62.4	56.0	54.4	62.9	63.1
HEAVY TRUCKS	64.1	62.7	53.7	54.9	63.3	63.4
VEHICULAR NOISE	74.3	72.8	68.4	63.1	72.6	**7 .0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	100	315	997	3153
LDN	90	286	904	2858

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY H. Aliso Creek Road
SEGMENT Alicia Parkway to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	21,700
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	84
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,170

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	27.3	- -
MEDIUM TRUCKS=	4.00	27.1	- -
HEAVY TRUCKS =	8.01	27.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.3	71.8	67.9	61.5	71.4	71.9
MEDIUM TRUCKS	64.4	62.9	56.5	55.0	63.4	63.7
HEAVY TRUCKS	64.9	63.5	54.5	55.7	64.1	64.2
VEHICULAR NOISE	74.4	72.9	68.4	63.2	72.7	**7 .1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	102	321	1016	3212
LDN	92	292	923	2918

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY I. Aliso Creek Road
SEGMENT La Paz Road to Moulton Parkway
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	16,800
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,680

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.8	67.4	63.4	57.0	66.9	67.4
MEDIUM TRUCKS	60.6	59.1	52.7	51.2	59.6	59.8
HEAVY TRUCKS	61.4	60.0	51.0	52.2	60.6	60.7
VEHICULAR NOISE	70.1	68.6	64.0	59.0	68.4	**68.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	38	121	381	1206
LDN	35	110	348	1099

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY J. Alicia Parkway
SEGMENT Aliso Creek Road to Hig lands Avenue
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,100
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	66
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,110

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.7	- -
MEDIUM TRUCKS=	4.00	37.6	- -
HEAVY TRUCKS =	8.01	37.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	76.0	74.5	70.6	64.2	74.1	74.6
MEDIUM TRUCKS	66.5	64.9	58.6	57.0	65.5	65.7
HEAVY TRUCKS	66.7	65.3	56.3	57.5	65.9	66.0
VEHICULAR NOISE	76.9	75.4	71.0	65.7	75.2	**75.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	181	573	1813	5735
LDN	164	520	1644	5198

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY K. La Paz Road
SEGMENT Aliso Creek Road to Ranc o Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	9,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	46
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	910

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.5	- -
MEDIUM TRUCKS=	4.00	44.4	- -
HEAVY TRUCKS =	8.01	44.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.4	65.9	62.0	55.6	65.5	66.0
MEDIUM TRUCKS	58.5	57.0	50.6	49.1	57.5	57.7
HEAVY TRUCKS	59.0	57.6	48.6	49.8	58.2	58.3
VEHICULAR NOISE	68.5	67.0	62.5	57.3	66.8	**67.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	26	83	261	826
LDN	24	75	237	750

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY L. Moulton Parkway
SEGMENT Aliso Creek Road to Ranc o Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	35,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,580

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.8	74.3	70.3	63.9	73.8	74.3
MEDIUM TRUCKS	66.2	64.7	58.3	56.8	65.2	65.5
HEAVY TRUCKS	66.5	65.0	56.0	57.2	65.6	65.7
VEHICULAR NOISE	76.6	75.2	70.7	65.4	74.9	**75.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	171	540	1709	5405
LDN	155	490	1549	4899

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY M. Ranc o Niguel Road
SEGMENT Moulton Parkway to Greenfield Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	16,500
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,650

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.5	65.0	61.0	54.7	64.5	65.0
MEDIUM TRUCKS	59.0	57.5	51.1	49.6	58.0	58.2
HEAVY TRUCKS	60.2	58.8	49.8	51.0	59.4	59.5
VEHICULAR NOISE	68.0	66.5	61.7	57.1	66.4	**66.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	24	75	237	749
LDN	22	69	217	685

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY N. Crown Valley Parkway
SEGMENT Greenfield Drive to Ca ot Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,500
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,150

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.1	73.6	69.6	63.2	73.1	73.6
MEDIUM TRUCKS	66.1	64.6	58.3	56.7	65.2	65.4
HEAVY TRUCKS	66.7	65.3	56.2	57.5	65.8	66.0
VEHICULAR NOISE	76.1	74.7	70.1	65.0	74.4	**7 .8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	152	481	1522	4813
LDN	138	437	1383	4373

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY O. Crown Valley Parkway
SEGMENT Ca ot Road to For es Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	59,600
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	94
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,960

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	17.3	- -
MEDIUM TRUCKS=	4.00	17.1	- -
HEAVY TRUCKS =	8.01	17.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	78.2	76.7	72.8	66.4	76.3	76.8
MEDIUM TRUCKS	70.0	68.5	62.1	60.6	69.0	69.3
HEAVY TRUCKS	70.8	69.4	60.4	61.6	70.0	70.1
VEHICULAR NOISE	79.5	78.0	73.4	68.4	77.8	**78.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	330	1044	3300	10437
LDN	301	951	3008	9511

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY P. Moulton Parkway
SEGMENT Ranc o Niguel Road to Crown Valley Parkway
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	23,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,380

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.0	72.5	68.5	62.2	72.0	72.5
MEDIUM TRUCKS	64.4	62.9	56.6	55.0	63.5	63.7
HEAVY TRUCKS	64.7	63.3	54.2	55.5	63.8	64.0
VEHICULAR NOISE	74.9	73.4	69.0	63.6	73.1	**7 .6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	114	359	1136	3593
LDN	103	326	1030	3257

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Crown Valley Parkway
SEGMENT Moulton Parkway/Golden Lantern to Greenfield Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,500
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,750

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	76.0	74.5	70.5	64.1	74.0	74.5
MEDIUM TRUCKS	66.4	64.9	58.5	57.0	65.4	65.7
HEAVY TRUCKS	66.7	65.2	56.2	57.5	65.8	65.9
VEHICULAR NOISE	76.8	75.4	70.9	65.6	75.1	**75.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	179	566	1790	5662
LDN	162	513	1623	5131

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY R. Paseo de Colinas
SEGMENT Golden Lantern to Ca ot Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	21,300
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,130

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.2	69.7	65.7	59.3	69.2	69.7
MEDIUM TRUCKS	62.2	60.7	54.3	52.8	61.3	61.5
HEAVY TRUCKS	62.8	61.3	52.3	53.6	61.9	62.0
VEHICULAR NOISE	72.2	70.7	66.2	61.1	70.5	**70.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	62	196	619	1957
LDN	56	178	562	1778

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY S. Paseo de Colinas
SEGMENT Ca ot Road and Camino Ca istrano
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,300
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,930

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.7	69.3	65.3	58.9	68.8	69.3
MEDIUM TRUCKS	61.8	60.3	53.9	52.4	60.8	61.1
HEAVY TRUCKS	62.3	60.9	51.9	53.1	61.5	61.6
VEHICULAR NOISE	71.8	70.3	65.8	60.6	70.1	**70.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	56	177	561	1773
LDN	51	161	509	1611

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY T. Alicia Parkway
SEGMENT Hig lands Avenue to Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,000
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,800

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	76.0	74.5	70.6	64.2	74.1	74.6
MEDIUM TRUCKS	66.5	65.0	58.6	57.0	65.5	65.7
HEAVY TRUCKS	66.7	65.3	56.3	57.5	65.9	66.0
VEHICULAR NOISE	76.9	75.4	71.0	65.7	75.2	**75.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	181	574	1814	5737
LDN	164	520	1644	5200

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY U. Crown Valley Parkway
SEGMENT La Paz Road to Moulton Parkway/Golden Lantern
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	30,300
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,030

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.7	72.2	68.3	61.9	71.8	72.3
MEDIUM TRUCKS	64.8	63.3	56.9	55.3	63.8	64.0
HEAVY TRUCKS	65.3	63.9	54.9	56.1	64.5	64.6
VEHICULAR NOISE	74.8	73.3	68.8	63.6	73.1	**7 .5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	111	351	1111	3514
LDN	101	319	1010	3193

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY V. Golden Lantern
SEGMENT Crown Valley Parkway to Paseo de Colinas
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,200
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	68
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,620

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	36.8	- -
MEDIUM TRUCKS=	4.00	36.7	- -
HEAVY TRUCKS =	8.01	36.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.8	71.4	67.4	61.0	70.9	71.4
MEDIUM TRUCKS	63.9	62.4	56.0	54.5	62.9	63.2
HEAVY TRUCKS	64.4	63.0	54.0	55.2	63.6	63.7
VEHICULAR NOISE	73.9	72.4	67.9	62.7	72.2	**72.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	91	288	910	2877
LDN	83	261	827	2614

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY W. Crown Valley Parkway
SEGMENT Niguel Road to La Paz Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	28,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,810

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.4	71.9	68.0	61.6	71.4	71.9
MEDIUM TRUCKS	64.4	62.9	56.6	55.0	63.5	63.7
HEAVY TRUCKS	65.0	63.6	54.5	55.8	64.1	64.3
VEHICULAR NOISE	74.4	73.0	68.4	63.3	72.7	**7 .1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	103	326	1031	3259
LDN	94	296	936	2961

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Golden Lantern
SEGMENT Paseo de Colinas to Marina Hills Drive/Camino Los Padres
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,600
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,760

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.6	73.2	69.2	62.8	72.7	73.2
MEDIUM TRUCKS	65.7	64.2	57.8	56.3	64.7	65.0
HEAVY TRUCKS	66.2	64.8	55.8	57.0	65.4	65.5
VEHICULAR NOISE	75.7	74.2	69.7	64.5	74.0	**7 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	138	436	1379	4361
LDN	125	396	1253	3962

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY Y. Crown Valley Parkway
SEGMENT Alicia Parkway to Clu House Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,000
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,600

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.2	72.8	68.8	62.4	72.3	72.8
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.7	64.0
HEAVY TRUCKS	64.9	63.5	54.5	55.7	64.1	64.2
VEHICULAR NOISE	75.1	73.7	69.2	63.9	73.4	**7 .8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	121	382	1206	3815
LDN	109	346	1093	3458

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY . Niguel Road
SEGMENT Crown Valley Parkway to Marina Hills Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,900
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,990

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.4	67.9	64.0	57.6	67.4	67.9
MEDIUM TRUCKS	61.1	59.6	53.3	51.7	60.2	60.4
HEAVY TRUCKS	62.0	60.6	51.5	52.8	61.2	61.3
VEHICULAR NOISE	70.6	69.2	64.5	59.6	69.0	**6 .**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	43	137	434	1371
LDN	40	125	395	1249

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY AA. Pacific Island Drive
SEGMENT Clu House Drive to Starview Lane
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,500
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	450

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.4	62.9	59.0	52.6	62.5	63.0
MEDIUM TRUCKS	55.5	54.0	47.6	46.0	54.5	54.7
HEAVY TRUCKS	56.0	54.6	45.6	46.8	55.2	55.3
VEHICULAR NOISE	65.5	64.0	59.5	54.3	63.8	**6 .2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	41	131	413
LDN	12	38	119	376

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY BB. Niguel Road
SEGMENT Marina Hills Drive to Clu House Drive
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,100
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,310

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.6	69.1	65.1	58.7	68.6	69.1
MEDIUM TRUCKS	61.0	59.5	53.1	51.6	60.0	60.3
HEAVY TRUCKS	61.3	59.8	50.8	52.1	60.4	60.5
VEHICULAR NOISE	71.4	70.0	65.5	60.2	69.7	**70.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	52	163	516	1632
LDN	47	148	468	1480

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY CC. Golden Lantern
SEGMENT C a arosa Park Road to Beacon Hill Way
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	23,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,380

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.0	71.6	67.6	61.2	71.1	71.6
MEDIUM TRUCKS	63.5	62.0	55.6	54.1	62.5	62.7
HEAVY TRUCKS	63.7	62.3	53.3	54.5	62.9	63.0
VEHICULAR NOISE	73.9	72.4	68.0	62.7	72.2	**72.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	91	288	912	2883
LDN	83	261	826	2613

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY DD. Crown Valley Parkway
SEGMENT Clu House Drive to Pacific Island Drive/Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,800
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,780

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.7	73.2	69.2	62.8	72.7	73.2
MEDIUM TRUCKS	65.1	63.6	57.2	55.7	64.1	64.4
HEAVY TRUCKS	65.4	63.9	54.9	56.2	64.5	64.6
VEHICULAR NOISE	75.5	74.1	69.6	64.3	73.8	**7 .2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	133	420	1327	4197
LDN	120	380	1203	3804

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY EE. Niguel Road
SEGMENT Ridgeway Avenue to Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,600
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,360

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.5	69.1	65.1	58.7	68.6	69.1
MEDIUM TRUCKS	61.0	59.5	53.1	51.6	60.0	60.3
HEAVY TRUCKS	61.2	59.8	50.8	52.0	60.4	60.5
VEHICULAR NOISE	71.4	70.0	65.5	60.2	69.7	**70.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	51	163	514	1626
LDN	47	147	466	1474

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY FF. Golden Lantern
SEGMENT Beacon Hill Way to Camino Del Avion
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,500
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,250

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.6	72.1	68.2	61.8	71.7	72.2
MEDIUM TRUCKS	64.1	62.6	56.2	54.6	63.1	63.3
HEAVY TRUCKS	64.3	62.9	53.9	55.1	63.5	63.6
VEHICULAR NOISE	74.5	73.0	68.6	63.3	72.8	**7 .2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	104	330	1044	3302
LDN	95	299	946	2992

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY GG. Camino Del Avion
SEGMENT Crown Valley Parkway to Niguel Road
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,210

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.6	67.1	63.1	56.7	66.6	67.1
MEDIUM TRUCKS	59.6	58.1	51.7	50.2	58.7	58.9
HEAVY TRUCKS	60.2	58.7	49.7	51.0	59.3	59.4
VEHICULAR NOISE	69.6	68.1	63.6	58.5	67.9	**68.**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	34	107	340	1075
LDN	31	98	309	976

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Laguna Niguel GPU
ROADWAY HH. Camino Del Avion
SEGMENT Niguel Road to Golden Lantern
LOCATION: City of Laguna Niguel, CA SCENARIO: Pro osed General Plan Buildout

JOB #: 0462-2023-011
DATE: 21-Mar-25
ENGINEER: R.Edelman

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	18,100
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,810

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.855	0.086	0.059	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.3	68.8	64.9	58.5	68.4	68.9
MEDIUM TRUCKS	61.4	59.9	53.5	51.9	60.4	60.6
HEAVY TRUCKS	61.9	60.5	51.5	52.7	61.1	61.2
VEHICULAR NOISE	71.4	69.9	65.4	60.2	69.7	**70.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	51	161	508	1607
LDN	46	146	462	1460