Attachment K– Noise Technical Memorandum

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Harris & Associates

TECHNICAL MEMORANDUM

To: Lev Gershman, Managing Partner, Tideline Partners
From: Sharon Toland, Project Manager, and Kelsey Hawkins, Noise Analyst, Harris & Associates
Subject: Tideline Kensho Residential Project – Noise Impact Analysis
Date: May 1, 2023
CC: Ryan Binns, Senior Director, Harris & Associates
Att: 1, Roadway Construction Noise Model Results; 2, FHWA Noise Prediction Model Results

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Dear Mr. Gershman,

The following presents the results of Harris & Associates' analysis of potential impacts related to noise exposure from implementation of the proposed Tideline Kensho Residential Project (Project). The Project would develop 183 dwelling units, including three three-story buildings and one four-story building with covered parking included in three of the four buildings. The site would be rezoned out of the Pheasant Hill Specific Plan and into the Downtown Vista Specific Plan (DVSP) and would also include a General Plan amendment, a zoning change, a Site Development Plan, and a Tentative Parcel Map. The Project also proposes off-site sidewalk improvements on the northern side of Guajome Street from Eddie Drive to the Project site and on the southern side of Guajome Street between the Project's western property line and Mercantile Street. The Project site is on the southern side of Guajome Street just west of the existing SPRINTER light-rail line. Adjacent properties include single-family residential to the north, south, and west (and across Lado De Loma Drive). Commercial development is across Guajome Street, and vacant parcels, commercial development, and multi-family residential development are to the east across the SPRINTER tracks.

Background

The California Department of Transportation defines "noise" as sound that is loud, unpleasant, unexpected, or undesired. Sound pressure levels are quantified using a logarithmic ratio of actual sound pressures to a reference pressure squared called "bels." A bel is typically divided into tenths, or decibels (dB). Sound pressure alone is not a reliable indicator of loudness because frequency (or pitch) also affects how receptors respond to sound. To account for the pitch of sounds and the corresponding sensitivity of human hearing to sounds, the raw sound pressure level is adjusted with a frequency-dependent A-weighting scale that is stated in units of decibels (dBA) (Caltrans 2013).

A receptor's response to a given noise may vary depending on the sound level, duration of exposure, character of the noise sources, time of day during which the noise is experienced, and the activity affected by the noise. Activities most affected by noise include rest, relaxation, recreation, study, and communications. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects from a variety of noise levels. The equivalent energy level (L_{eq}) provides an average acoustic or sound energy content of noise measured during a prescribed period, such as one minute, 15 minutes, one hour, or eight hours. The sound level may not be constant over the measured time period, but the average dB sound level, given as dBA L_{eq}, contains an equal amount of energy as the fluctuating sound level (Caltrans 2013). Community noise equivalent level (CNEL) is an average sound level during a 24-hour day that considers the 24-hour day divided into three periods. CNEL is obtained by adding an additional five dBA to sound levels in the evening between 7 p.m. and 10 p.m. and an additional 10 dBA to noise levels in the nighttime hours between 10 p.m. and 7 a.m. (City of Vista 2012).

The dB level of a sound decreases (or attenuates) as the distance from the source of that sound increases. For a single point source, such as a piece of mechanical equipment, the sound level normally decreases by approximately six dBA for each doubling of distance from the source. Sound that originates from a linear, or "line," source, such as vehicular traffic, attenuates by approximately three dBA per doubling of distance. Other contributing factors that affect sound reception include ground absorption, natural topography that provides a natural barrier, meteorological conditions, or the presence of human-made obstacles, such as buildings and sound barriers (Caltrans 2013).

Existing predominant noise sources within the vicinity of the Project site include traffic noise, specifically from Mercantile Street and South Santa Fe Avenue, and the North County Transit District SPRINTER light-rail line.

Groundborne Vibration

The Federal Transit Administration describes groundborne vibration as vibration that can cause buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earthmoving equipment. The effects of groundborne vibration include feel-able movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is typically only a factor in the case of blasting and pile driving during construction. Groundborne vibration related to potential building damage effects is generally related to the peak particle velocity (PPV) in inches per second (FTA 2018).

Regulatory Setting

Vista General Plan 2030 Noise Element

The Noise Element of the Vista General Plan 2030 includes a noise/land use compatibility matrix for assessing the suitability of different categories of planned land uses based on exterior ambient noise level exposure (Table NE-3 from the Vista General Plan 2030) (City of Vista 2012). For land uses surrounding the Project site (single-family residential), the Noise Element specifies exterior noise levels up to 60 dBA CNEL as normally acceptable. Noise levels up to 65 dBA CNEL are normally acceptable for multi-family residential land uses. Noise levels up to 70 dBA CNEL are conditionally acceptable, and noise levels exceeding 70 dBA CNEL are generally unacceptable for single- and multi-family residential land uses. In addition, the City of Vista defines specific maximum noise levels that shall not be exceeded for both interior and exterior land use areas. A proposed project shall not generate noise levels that exceed these standards. The City of Vista limits interior noise levels to 45 dBA CNEL for residential development, with a maximum exterior noise level of 65 dBA CNEL.

Vista Noise Ordinance

Sections 8.32.010 through 8.32.060 of the Vista Municipal Code pertain to City noise requirements and enforcement of violations. The City of Vista has adopted the County of San Diego Noise Ordinance to control excessive noise levels, including noise from construction activities.

Table 1, Applicable Exterior Property Line Noise Limits, lists the applicable exterior property line noise limits. This table is specific to the City of Vista and replaces the table in Section 36.404 of the County of San Diego Noise Ordinance. It is unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level at any point on or beyond the boundaries of the property exceeds these limits. The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones.

Table 1. Applicable Exterior Property Line Noise Limits

Zone	Time	Applicable Limit One-Hour Average Sound Level (dB)
A-1, E-1, O, OSR, R-1B, MHP	7 a.m.–10 p.m. 10 p.m.–7 a.m.	50 45
R-M	7 a.m.–10 p.m. 10 p.m.–7 a.m.	55 50
C-1, C-2, O-3, C-T, OP, M-U, and Downtown Vista Specific Plan	7 a.m.–10 p.m. 10 p.m.–7 a.m.	60 55
Park Specific Plan and Specific Plan 14	Any time	70

Source: City of Vista 2014.
Notes: dB = decibel
Zones: A-1 = Agricultural; C-1, C-2, and C-3 = Commercial; C-T = Commercial Transient; E-1 = Estate; MHP = Mobile Home Park; M-U = Mixed Use; O = Open Space; O-3 = Office Park; OP = Office Professional; OSR = Open Space Residential; R-1B = Single-Family Residential; R-M = Multi-Family Residential

The City of Vista has adopted the County of San Diego Noise Ordinance stipulations controlling construction noise. San Diego County Code of Regulatory Ordinances, Sections 36.408 and 36.409, Construction Equipment, state that, except for emergency work, it shall be unlawful for any person to operate, or cause to be operated, construction equipment (County of San Diego 2022):

A. Between 7 p.m. and 7 a.m.

B. On Sunday or a holiday. For the purposes of this section, a holiday means January 1, the last Monday in May, July 4, the first Monday in September, December 25, and any day appointed by the president as a special national holiday or the governor of the state as a special state holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10 a.m. and 5 p.m. at the person's residence or for the purpose of construction of a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limits in Sections 36.409 and 36.410.

C. Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 dBA for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

Significance Thresholds

Impacts would be significant if the Project would expose proposed residential uses to exterior noise levels exceeding 65 dBA CNEL or interior noise levels exceeding 45 dBA CNEL as described in the Vista General Plan 2030 Noise Element.

Per the Vista Noise Ordinance, impacts would be significant if the Project would generate noise levels at a common property line with the adjacent single-family residences that would exceed the following one-hour average exterior noise levels: 50 dBA from 7 a.m. to 10 p.m. and 45 dBA from 10 p.m. to 7 a.m.

For traffic-related noise, impacts are considered significant in areas where traffic noise at existing residential uses exceeds the Vista General Plan 2030 exterior noise standard 65 dBA CNEL and implementation of the Project would result in an increase of the noise level by three CNEL or more.

Construction activity would be considered significant for nearby residences if it exceeds an eight-hour average exterior noise level of 75 dBA or a maximum impulsive noise level of 82 dBA on an occupied residential use, or would take place during the prohibited hours of 7 p.m. and 7 a.m. of the next day, on Sundays, or on a holiday.

Construction-related groundborne vibration would be significant if it exceeds the "strongly perceptible" vibration annoyance potential criteria for human receptors, as specified by the California Department of Transportation, of 0.1 inch per second PPV and 0.5 inch per second PPV for damage to older residential structures for continuous/frequent intermittent construction sources (such as impact pile drivers, vibratory pile drivers, and vibratory compaction equipment) (Caltrans 2013).

Construction Impact Analysis

Temporary Construction Noise

Construction of the Project would have the potential to result in temporary noise level increases as a result of operation of heavy equipment. Construction of the Project would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Sound levels from typical construction equipment range from 60 to 90 dBA L_{eq} at 50 feet from the source (FHWA 2008). Noise from construction equipment generally exhibits point source acoustic characteristics. Strictly speaking, a point source sound decays at a rate of six dBA per doubling of distance from the source. The rule applies to the propagation of sound waves with no ground interaction.

Standard equipment, such as dozers, loaders, graders, backhoes, scrapers, and miscellaneous trucks, would be used for construction of the Project. Some blasting may be required. Noise levels from standard construction equipment on the Project site were determined based on typical equipment noise levels established by the Roadway Construction Noise Model (FHWA 2008) (Attachment 1, Roadway Construction Noise Model Results). The three noisiest pieces of construction equipment (grader, excavator, and dozer) that could be required for the Project were assumed to operate simultaneously in the same location and would have the potential to generate noise levels up to 83.7 dBA at 50 feet from the construction site. An average distance of 50 feet from the Project boundary is assumed for worst-case noise levels because individual equipment locations would vary throughout a given day and all equipment would not operate in the same location on a given day. Noise levels would also likely be less during off-site sidewalk improvement construction because the number of pieces of equipment operating simultaneously would be limited by the size of the construction area.

Construction equipment noise would be considered significant if it exceeds an eight-hour average exterior noise level of 75 dBA or a maximum impulsive noise level of 82 dBA at an occupied residential use. Construction activities would take place across the Project site and along Guajome Street within the allowable hours of 7 a.m. and 7 p.m.; thus, noise exposure at individual residences would vary. However, existing residential uses are adjacent to the Project site and along Guajome Street and would have the potential to be exposed to average construction noise in excess of 75 dBA. Therefore, this impact would be potentially significant.

Blasting may also be required during the grading phase of construction if it is determined that excavation cannot be completed with standard construction practices. Blasting specifications are currently unknown; however, blasting practices would comply with all applicable safety regulations and would include the following best management practices to minimize impacts to neighboring residences:

- Blasting would be limited to one blast per day.
- Overburden, or a similar best management practice, would be used to reduce fugitive dust, noise, and the possibility of small fly-rock.
- Shot area would be lightly sprayed with water to minimize dust.
- Shot area would be located as far from residences as possible and would not occur within 100 feet of residences.

As stated above, a maximum of one blast would occur during blast days, and approximately six blast days would be anticipated, if required. On blast days, all other construction work would cease. Standard construction operation would be required during blast set up, and each blast would last only a few seconds. Due to the short duration, blasting would not significantly contribute to average construction noise. Additionally, blasts are

generally scheduled for noon, during typical lunch breaks, to have the least nuisance impact (Kruer 2022). However, operation of standard construction equipment during blasting setup, cleanup, and excavated material loading would be similar to the other phases of construction, and a potentially significant impact would occur.

This potentially significant impact is consistent with the conclusion of the Program Environmental Impact Report prepared for the Downtown Vista Specific Plan Update (DVSP PEIR) (City of Vista 2010) that development under the DVSP would have the potential to result in significant temporary increases in ambient noise levels during construction activities.

Temporary Construction Groundborne Vibration

The main concerns associated with groundborne vibration from this type of project are annoyance and damage; however, vibration-sensitive instruments and operations can be disrupted at much lower levels than would typically affect other uses. Railroads may be a source of groundborne vibration; however, the SPRINTER is not identified as a source of mobile vibration impacts in the PEIR prepared for the Vista General Plan 2030 (City of Vista 2011), and light-rail systems typically only result in groundborne vibration less than 50 feet from the tracks (FTA 2018). Therefore, no existing sources of groundborne vibration are at the Project site, and as such, the proposed residences would not be exposed to excessive groundborne vibration. Therefore, this analysis focuses on the potential for the Project to generate vibration at surrounding land uses. Groundborne vibration occurring as part of the Project would potentially result from construction equipment. Following construction, the proposed residences would not generate groundborne vibration.

Conventional construction techniques, such as earth movement by trucks, have the potential to generate groundborne vibration and noise. Some blasting may also be required for the proposed Project. Reference vibration levels available from the Federal Transit Administration for typical construction equipment are provided in Table 2, Vibration Levels from Typical Construction Equipment.

Table 2. Vibration Levels from Typical Construction Equipment

Equipment Description	Approximate RMS Vibration Level at 25 Feet (inches/second)	Approximate RMS Vibration Level at 50 Feet (inches/second)
Vibratory Roller	0.210	0.074
Hoe Ram	0.089	0.031
Large Bulldozer	0.089	0.031
Caisson Drilling	0.089	0.031
Loaded Trucks	0.076	0.027
Jackhammer	0.035	0.012
Small Bulldozer	0.003	0.001

Notes: RMS = Root Mean Square Amplitude

Excessive groundborne vibration would occur if construction-related groundborne vibration exceeds the “strongly perceptible” vibration annoyance potential criteria for human receptors as specified by the California Department of Transportation. The criteria are 0.1 inch per second PPV and 0.5 inch per second PPV for damage to older residential structures for continuous/frequent intermittent construction sources (such as impact pile drivers, vibratory pile drivers, and vibratory compaction equipment) (Caltrans 2013). As shown in Table 2, typical construction equipment would generally not result in excessive groundborne vibration above California Department of Transportation-allowed levels for annoyance or building damage. Operation of vibratory equipment, such as rollers, may result in annoyance to receptors within 50 feet but would not exceed the standard for potential building damage. The nearest structures to the Project site are the residences adjacent to the Project site and Guajome Street. Due to setbacks provided by existing residential yards and proposed landscape areas, construction equipment would generally be more than 50 feet from existing structures. Additionally, off-site exposure to such groundborne vibration would be temporary because it would be limited to short-term operation

of vibratory rollers, or similar equipment, in the immediate vicinity of receptors. Therefore, temporary impacts related to groundborne vibration from standard construction would be less than significant.

As described above, blasting may be required during excavation. Up to four blasts, one blast per day for up to four days, are anticipated. Typical construction site blasting may result in vibration levels up to 100 vibration decibels (VdB) at 50 feet, which is the approximate threshold for minor cosmetic damage to fragile buildings (FTA 2018). The precise location of blasts, if required, is currently unknown. However, blasts would be located as far from residential structures as feasible, with a minimum distance of 100 feet. Therefore, blasting would not take place within the screening distance for potential damage to fragile buildings. Additionally, each blast would last a few seconds and would not be a significant nuisance. Therefore, temporary impacts related to groundborne vibration from blasting would also be less than significant.

Compared to the DVSP PEIR's (City of Vista 2010) potentially significant groundborne vibration impact, the proposed Project's temporary impacts from groundborne vibration would be less than significant.

Operation Impact Analysis

Permanent Increase in Vehicle Noise

The potential for implementation of the Project to permanently increase ambient noise levels as a result of increased traffic was assessed using standard noise modeling equations adapted from the Federal Highway Administration Noise Prediction Model (Attachment 2, FHWA Noise Prediction Model Results). The modeling calculations take into account the posted vehicle speed, median width, average daily trip volume, and estimated vehicle mix. Existing and horizon year (2030) traffic volumes and roadway characteristics with the operation of the Project were obtained from CR Associates (CRA 2022). Noise levels were calculated at 50 feet from the centerline of each roadway segment. Generally, noise from heavily traveled roadways would experience a decrease of approximately three dBA for every doubling of distance. The actual sound level at any receptor location depends on such factors as the source-to-receptor distance and the presence of intervening structures, barriers, vegetation, and topography; therefore, the result of the calculations is the worst-case scenario.

Existing and future increases in traffic with and without the Project are provided in Table 3, Existing Plus Project Traffic Noise Levels. Horizon year traffic noise levels with and without the Project are provided in Table 4, Horizon Year (2030) Traffic Noise Levels.

Table 3. Existing Plus Project Traffic Noise Levels

Roadway	Segment	Existing (dBA CNEL)	Existing + Project (dBA CNEL)	Increase in Noise Level From Existing	Significant Impact?
Lado De Loma Drive	Vista Village Drive to Guajome Street	59	59	0	No
Guajome Street	Lado De Loma Drive to Project Driveway 1	58	58	0	No
Guajome Street	Project Driveway 1 to South Santa Fe Avenue	58	58	0	No

Source: CR Associates 2022 (traffic data). See Attachment 2 for noise level calculations.
Notes: CNEL = community noise equivalent level; dBA = A-weighted decibel

Table 4. Horizon Year (2030) Traffic Noise Levels

Roadway	Segment	Horizon Year (dBA CNEL)	Horizon Year + Project (dBA CNEL)	Increase in Noise Level with Project	Significant Impact?
Lado De Loma Drive	Vista Village Drive to Guajome Street	60	60	0	No
Guajome Street	Lado De Loma Drive to Project Driveway 1	58	59	+1	No
Guajome Street	Project Driveway 1 to South Santa Fe Avenue	58	59	+1	No

Source: CR Associates 2022 (traffic data). See Attachment 2 for noise level calculations.
Notes: CNEL = community noise equivalent level; dBA = A-weighted decibel

As shown in Tables 3 and 4, implementation of the Project would not result in an increase in traffic noise levels of more than one dBA on any segment. Additionally, existing noise levels and horizon year noise levels with the addition of Project traffic would not exceed the normally acceptable noise compatibility standard of 60 dBA CNEL for residential land uses. Impacts would be less than significant, consistent with the findings of the DVSP PEIR (City of Vista 2010).

Other Operational Noise Sources

Noise generated from residential uses is generally described as "nuisance noise." Nuisance noise is defined as intermittent or temporary neighborhood noise from sources such as amplified music, barking dogs, and landscape maintenance equipment that may be disturbing to other residents. Nuisance noise impacts are more likely to occur in more densely developed areas where residences would be closer together and where neighbors would be more likely to hear a neighbor's music, dog, or landscape maintenance equipment. A multi-family townhome development would likely be exposed to and generate occasional nuisance noise. Sections 8.32.010 through 8.32.060 of the Vista Municipal Code contains the noise control standards for the City and prohibits nuisance noise from exceeding the noise standards at any time. Compliance with the Vista Municipal Code would limit exposure to excessive nuisance noise. Additionally, nuisance noises would be different from each other in kind, duration, and location. Therefore, the overall effects would be separate and, in most cases, would not affect the receptors at the same time. Therefore, nuisance noise would not result in a significant impact.

Rooftop heating, ventilation, and air conditioning (HVAC) equipment would be installed at the new residential buildings. Based on an analysis of the equipment anticipated for the Project used for a similar project, the equipment would have the potential to generate noise levels that average 56 dBA at a distance of seven feet and may run continuously during the day and night (HELIX 2017). As such, individual HVAC equipment could have the potential to generate noise that may exceed the City's hourly noise limit for sensitive receptors of 50 dBA during daytime hours (45 dBA at night). Multiple units would be required on each rooftop. The nearest receptors are residences adjacent to the Project site. However, units would be in the center of each building to maximize distance from surrounding receptors. Additionally, the proposed residential buildings would be separated from adjacent residences by proposed landscaping and a driveway. No receptors would be within 25 feet of HVAC systems at the proposed buildings. Equipment would also be required to be shielded to achieve interior noise standards for the proposed residences and for compliance with the City of Vista's Noise Ordinance for surrounding land uses. Therefore, this impact would be less than significant.

Noise sources from the proposed parking lot would include car alarms, door slams, radios, and tire squeals. These sources typically range from approximately 51 to 66 dBA at a distance of 10 feet (Gordon Bricken & Associates 2012) and are generally short term and intermittent. Parking lots have the potential to generate noise levels that exceed the exterior sound level limits established in the Vista Municipal Code, depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location. Additionally, most Project parking would be in parking garages that would provide some additional noise

attenuation. Surface parking would be along the eastern boundary of the Project, adjacent to the SPRINTER tracks, and would be separated from adjacent residences by the proposed buildings. Therefore, the overall effects would be separate and, in most cases, would not affect noise-sensitive receptors at the same time, and noise generated from the proposed parking lot would be less than significant, consistent with the findings of the DVSP PEIR (City of Vista 2010).

Vista General Plan 2030 Noise Compatibility

Due to the proximity of the SPRINTER light-rail line to the Project site, the following analysis of potential noise exposure to the proposed residences has been included for consistency with the Vista General Plan 2030 (City of Vista 2012) noise compatibility standards for new development. Specifically, to demonstrate consistency with Noise Element Policy 1.1, which discourages new noise-sensitive land uses from locating and existing noise-sensitive land uses from expanding in areas where noise levels are 65 dB CNEL or above. During operations, the Project would be exposed to existing noise from the North County Transit District SPRINTER light-rail line adjacent to the eastern boundary of the Project site. As shown in Tables 3 and 4, noise from nearby roadways would not exceed 65 dBA CNEL. The Vista General Plan 2030 (City of Vista 2012) includes SPRINTER light-rail line noise contour distances as shown in Table 5, SPRINTER Light-Rail Line Noise Contour Distances.

Table 5. SPRINTER Light-Rail Line Noise Contour Distances

Rail Centerline to 60 dBA CNEL Contour (feet)	Rail Centerline to 65 dBA CNEL Contour (feet)	Rail Centerline to 70 dBA CNEL Contour (feet)
300	140	70

Notes: CNEL = community noise equivalent level; dBA = A-weighted decibel

The nearest receptors on the Project site would be approximately 100 feet from the center of the SPRINTER light-rail line. At this distance, noise levels from the light-rail line would have the potential to be up to approximately 68 dBA, which would exceed the maximum allowable exterior noise level of 65 dBA CNEL for residences. However, before obtaining a building permit, the applicant would be required to demonstrate that the Project would comply with an interior 45 dBA CNEL standard. Units with the potential to be exposed to exterior noise levels in excess of 65 dBA CNEL would be designed to include window and wall construction that would reduce interior noise levels to an acceptable level. Available standard construction can provide the required 23 dBA noise reduction. For example, a common stud wall can provide a 35 dBA noise reduction (HUD 2009). Appropriate means of air circulation and provision of fresh air would be present to allow windows to remain closed for extended intervals of time so that acceptable levels of noise could be maintained in the interior. As stated previously, the building design would include an HVAC system. The system would meet the criteria of the International Building Code (Chapter 12, Section 1202, of the 2019 California Building Code) to ensure that windows would be able to remain permanently closed. This impact would be less than significant, consistent with the findings of the DVSP PEIR (City of Vista 2010).

Aircraft Noise

The Project site is not within the boundaries of an Airport Land Use Plan and is not within two miles of a public use airport or private airstrip. The nearest airports are the McClellan-Palomar Airport, approximately five miles to the south, and the Oceanside Municipal Airport, approximately 6.3 miles to the west. The Project site is outside the noise contours for either airport; therefore, the Project would not expose residents to excessive noise levels, and no impacts would occur.

Mitigation Measures

Implementation of the Project would have the potential to result in a significant noise impact related to construction equipment. The Project would implement Mitigation Measure NOI-1 from the DVSP PEIR and would reduce construction impacts through the application of noise reduction measures during construction.

DVSP Mitigation Measure NOI-1: Construction contractors for projects within the proposed SPA shall implement the following measures to minimize short-term noise levels caused by construction activities.

Measures to reduce construction/demolition noise shall be included in contractor specifications and shall include, but not be limited to, the following:

- Properly outfit and maintain construction equipment with manufacturer-recommended noise- reduction devices to minimize construction-generated noise.
- Operate all diesel equipment with closed engine doors and equip with factory recommended mufflers.
- Use electrical power to operate air compressors and similar power tools.
- Employ additional noise attenuation techniques as needed to reduce excessive noise levels so that construction noise would be in compliance with San Diego County Code Sections 36.408 and 36.409. Such techniques shall include, but not be limited to, the construction of temporary sound barriers or sound blankets between construction sites and nearby noise- sensitive receptors.
- Notify adjacent noise-sensitive receptors in writing within two weeks of any construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large- scale grading operations that would occur within 100 ft of the property line of the nearest noise-sensitive receptor. The extent and duration of the construction activity will be included in the notification.

Project Implementation of DVSP Mitigation Measure NOI-1: The Project shall implement DVSP Mitigation Measure NOI-1, as written above, for the DVSP.

DVSP Mitigation Measure NOI-2: Future residential development, libraries, and other noise-sensitive land uses proposed within the 65 dBA CNEL noise contour of the SPA would require a site-specific acoustical analysis conducted by an acoustical engineer. The acoustical analysis shall demonstrate that the proposed Project satisfies the exterior and interior noise standards established by the Vista Municipal Code. If the development includes a mix of uses, or is adjacent to a noise sensitive land use, then the noise level limit of the more restrictive zoning category shall be used.

Project Implementation of DVSP Mitigation Measure NOI-2: The Project has implemented DVSP Mitigation Measure NOI-2 and provided an analysis of the Project's impacts to noise.

Summary

Implementation of the Project would result in a potentially significant noise impact related to construction equipment. Mitigation Measure NOI-1 would be implemented to require noise reduction measures during construction that would reduce construction equipment noise impacts to a less than significant level. With mitigation, all Project noise-related impacts would be reduced to a less than significant level.

Operational noise sources including vehicle noise, nuisance noise, HVAC equipment, parking lots, Vista General Plan 2030 compatibility with the SPRINTER light-rail line, and aircraft noise would be less than significant, consistent with the findings of the DVSP PEIR (City of Vista 2010).

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Attachment 1. Roadway Construction Noise Model Results

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Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/22/2022
Case Description: Tideline

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence	Residential	60.0	50.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Grader	No	40	85.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	83.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Attachment 2. FHWA Noise Prediction Model Result

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TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number:
Project Name: Tideline - Pheasant Hill

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Chen Ryan, 2022
Community Noise Descriptor: L_{dn}: ____ CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

"-" = contour is located within the roadway right-of-way.
Distance is from the centerline of the roadway segment to the receptor location.

Analysis Condition / Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 50 Feet	Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL	Calc Dist	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Leve: A	MT	HT	Dist Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total	DISTANCE TO CONTOUR (2): 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Lado De Loma Drive														0	0	0	0	0	0	0	0	0	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	0	0	0	0
Vista Village Drive to Guajome Street, existing	2	0	5,263	25	0.5	2.0%	1.0%	**58.6**	-	-	40	86	50	4,089	668	505	92	47	5	1	8	4	59.4	71.1	78.7	-0.1	55.3	50.6	55.3	59.0	52.3	43.0	45.1	53.5	39.5	41.1	46.1	48.0	9	19	40	86
Vista Village Drive to Guajome Street, existing + project	2	0	5,818	25	0.5	2.0%	1.0%	**59.0**	-	-	43	92	50	4,521	739	559	102	52	6	2	9	5	59.4	71.1	78.7	-0.1	55.7	51.0	55.7	59.4	52.7	43.4	45.6	53.9	40.0	41.6	46.5	48.4	9	20	43	92
Vista Village Drive to Guajome Street, horizon year 2030	2	0	6,500	25	0.5	2.0%	1.0%	**59.5**	-	-	46	99	50	5,051	826	624	114	58	7	2	10	5	59.4	71.1	78.7	-0.1	56.2	51.5	56.2	59.9	53.2	43.9	46.1	54.4	40.4	42.0	47.0	48.9	10	21	46	99
Vista Village Drive to Guajome Street, horizon year + project	2	0	7,055	25	0.5	2.0%	1.0%	**59.8**	-	-	49	105	50	5,482	896	677	123	63	7	2	11	6	59.4	71.1	78.7	-0.1	56.5	51.9	56.6	60.3	53.6	44.3	46.4	54.8	40.8	42.4	47.3	49.2	10	23	49	105
Guajome Street														0	0	0	0	0	0	0	0	0	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	0	0	0	0
Lado De Loma Drive to Project Driveway #1, existing	2	0	4,131	25	0.5	2.0%	1.0%	**57.5**	-	-	34	73	50	3,210	525	397	72	37	4	1	6	3	59.4	71.1	78.7	-0.1	54.2	49.5	54.3	57.9	51.3	42.0	44.1	52.4	38.5	40.1	45.0	46.9	7	16	34	73
Lado De Loma Drive to Project Driveway #1, existing + project	2	0	4,686	25	0.5	2.0%	1.0%	**58.1**	-	-	37	80	50	3,641	595	450	82	42	5	1	7	4	59.4	71.1	78.7	-0.1	54.8	50.1	54.8	58.5	51.8	42.5	44.6	53.0	39.0	40.6	45.6	47.5	8	17	37	80
Lado De Loma Drive to Project Driveway #1, horizon year 2030	2	0	5,100	25	0.5	2.0%	1.0%	**58.4**	-	-	39	85	50	3,963	648	490	89	45	5	1	8	4	59.4	71.1	78.7	-0.1	55.1	50.4	55.2	58.8	52.2	42.9	45.0	53.3	39.4	41.0	45.9	47.8	8	18	39	85
Lado De Loma Drive to Project Driveway #1, horizon year + proje	2	0	5,655	25	0.5	2.0%	1.0%	**58.9**	-	-	42	91	50	4,394	718	543	99	50	6	2	9	5	59.4	71.1	78.7	-0.1	55.6	50.9	55.6	59.3	52.6	43.3	45.5	53.8	39.8	41.4	46.4	48.3	9	20	42	91
Guajome Street														0	0	0	0	0	0	0	0	0	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	0	0	0	0
Project Driveway #1 to South Santa Fe Avenue, existing	2	0	4,131	25	0.5	2.0%	1.0%	**57.5**	-	-	34	73	50	3,210	525	397	72	37	4	1	6	3	59.4	71.1	78.7	-0.1	54.2	49.5	54.3	57.9	51.3	42.0	44.1	52.4	38.5	40.1	45.0	46.9	7	16	34	73
Project Driveway #1 to South Santa Fe Avenue, existing + projec	2	0	4,686	25	0.5	2.0%	1.0%	**58.1**	-	-	37	80	50	3,641	595	450	82	42	5	1	7	4	59.4	71.1	78.7	-0.1	54.8	50.1	54.8	58.5	51.8	42.5	44.6	53.0	39.0	40.6	45.6	47.5	8	17	37	80
Project Driveway #1 to South Santa Fe Avenue, horizon year 20	2	0	5,100	25	0.5	2.0%	1.0%	**58.4**	-	-	39	85	50	3,963	648	490	89	45	5	1	8	4	59.4	71.1	78.7	-0.1	55.1	50.4	55.2	58.8	52.2	42.9	45.0	53.3	39.4	41.0	45.9	47.8	8	18	39	85
Project Driveway #1 to South Santa Fe Avenue, horizon year + p	2	0	5,655	25	0.5	2.0%	1.0%	**58.9**	-	-	42	91	50	4,394	718	543	99	50	6	2	9	5	59.4	71.1	78.7	-0.1	55.6	50.9	55.6	59.3	52.6	43.3	45.5	53.8	39.8	41.4	46.4	48.3	9	20	42	91

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