5172 ARLINGTON AVE, #4453
RIVERSIDE, CA 92514
951.787.9222
WWW.MIGCOM.COM

Memorandum

To: Izzak Mireles, Senior Planner, City of San Juan Capistrano

CC: --

From: Kasey Kitowski

Re: French Hotel 2025 Air Quality and Noise Study Conclusions

Date: June 15, 2026

This memorandum evaluates whether existing conditions in the vicinity of the French Hotel project site, located at 31841 to 31871 Camino Capistrano, have substantially changed since the Air Quality Analysis and Noise and Vibration Analysis were prepared on November 24, 2025. The purpose of this evaluation is to determine if the conclusions and analysis contained in the November 2025 memorandums remain valid.

Air Quality Memorandum Evaluation

In order to identify changes in the existing setting, MIG conducted a review of proposed developments in San Juan Capistrano, and found that new sensitive receptors have not been placed in the vicinity of the project site at a distance closer than the receptors that were evaluated in the 2025 Air Quality Analysis (i.e., residential receptors approximately 75 feet from the project site). Therefore, the 2025 memorandum continues to evaluate the worst-case exposure. Additionally, the SCAMQD has not published new meteorological data since the preparation of the Air Quality Analysis, and wind conditions such as the prevailing wind direction would not have changed (SCAQMD 2025). Finally, the regulatory setting, such as the South Coast Air Quality Management District (SCAQMD) rules referenced in the Air Quality Analysis and the SCAQMD's 2022 Air Quality Management Plan have not been updated. Therefore, no substantial changes to conditions identified in the 2025 Air Quality Analysis have occurred, and the analysis and conclusions in the memorandum remain valid.

Noise Memorandum Evaluation

As discussed in the Air Quality Memorandum Evaluation above, no additional sensitive receptors have been placed in the vicinity of the project site at a distance closer than the receptors that were evaluated in the 2025 Noise and Vibration Analysis. Therefore, the 2025 memorandum still evaluates worst-case exposure to construction and operational noise. Additionally, the regulatory setting remains current. Section 9-3.531 of the City's Municipal Code and the Noise Element of the General Plan, which were used to evaluate if the proposed project would have significant impacts, have not been updated since the preparation of the 2025 noise memorandum.

The 2025 noise memorandum contains noise monitoring from April 2023. While changes have occurred in the vicinity of the project site since the monitoring was conducted, noise levels are not expected to have substantially changed. A review of aerial images from Google Earth showed that construction of the River Street Marketplace, a multi-building commercial development located west of the residences along Los Rios Street, was completed after the 2023 noise monitoring. The development is approximately 200 feet to 580 feet from the project

site,[1] which would allow for noise from the commercial uses to attenuate with distance. Additionally, noise from the commercial development would be shielded by the residences along Los Rios Street. The noise levels from commercial uses, which would be lowered by distance and shielding, would not substantially increase noise levels along the western portion of the project site, where the rail line would be the predominant noise source, or the eastern portion of the project site, which would have additional distance attenuation and where vehicle traffic from Camino Capistrano would be the predominant noise source. The commercial development, as well as overall potential population growth since 2023, could increase the amount of vehicles on local roadways. However, based on the modeling conducted for the River Street Marketplace, noise levels from Camino Capistrano, the roadway bordering the project site, would increase by less than 1 dBA at a distance of 50 feet from the roadway centerline under 2040 conditions, which includes the General Plan buildout plus trips from the commercial development (City of San Juan Capistrano, 2019). Therefore, ambient noise levels at the project site are not expected to have substantially changed from the 2023 conditions included in the 2025 memorandum. No substantial changes to conditions identified in the 2025 Noise and Vibration Analysis have occurred, and the analysis and conclusions in the memorandum remain valid.

References

The following references were used to prepare this memorandum.

City of San Juan Capistrano 2019. River Street Marketplace Project Draft Environmental Impact Report, Volume III, Appendix H, State Clearinghouse No. 2018011019. San Juan Capistrano, CA. January 2019. Available online at: <https://www.sanjuancapistrano.org/241/River-Street Marketplace>

MIG 2025a. Air Quality Analysis for French Hotel Project. November 24, 2025.

MIG 2025b. Noise and Vibration Analysis for French Hotel Project. November 24, 2025.

SCAQMD 2025. Health Risk Assessment Tool and AERMOD-Ready Meteorological Data Files. AERMOD-Ready Meteorological Files and Background Concentrations. https://www.aqmd.gov/assets/aermet/AERMET_files_And_HRA_Tool.html

[1] The commercial development is approximately 200 feet from the project site at its nearest point (i.e., the distance from the western property line of the project site to the eastern property line of the River Street Marketplace) and approximately 580 feet from the project site at its furthest point (i.e., the distance from the western property line of the project site to the western property line of the River Street Marketplace). There is approximately 975 feet from the northeastern portion of the project site to the southwestern portion of the River Street Marketplace.

1650 SPRUCE STREET, STE 106
RIVERSIDE, CA 92507
951.787.9222
WWW.MIGCOM.COM

Memo

To: Izzak Mireles, Senior Planner, City of San Juan Capistrano

CC: --

From: Kasey Kitowski

Date: November 24, 2025

SUBJECT: Noise and Vibration Analysis for French Hotel Project

MIG, Inc. (MIG) has prepared this memorandum at the request of the City of San Juan Capistrano. This memorandum estimates the potential noise and vibration levels for the proposed French Hotel Project (proposed project) and evaluates those noise and vibration levels against applicable standards established by the City. As described in detail in this memorandum, the proposed project does not have the potential to result in adverse noise or vibration impacts because it has incorporated noise control measures that would render potential temporary noise and vibration level less than significant, would not result in a substantial permanent increase in ambient noise levels above City standards, and would not expose people visiting or working at the project site to excessive aircraft- or airport-related noise levels. The proposed project also has incorporated design features to ensure it is compatible with the existing noise environment at the site. Portions of the site would be incompatible with vibration thresholds. Refer to Attachment 01 for background information on environmental noise and vibration, including commonly used terminology.

PROJECT DESCRIPTION

The proposed project involves the construction of a multi-building hotel development at 31841 – 31871 Camino Capistrano, in the central portion of the City of San Juan Capistrano. The project site is a partially developed, 1.68-acre site comprised of three land parcels (APN 121-150-28, -29, and -30) that is bound by Camino Capistrano to the east, an Amtrak/Metrolink railway to the west, and commercial uses to the north and south. The eastern portion of the site, at street level, has a higher elevation than the western portion of the site. Interstate 5 (I-5) and State Route 74 (SR-74) are located approximately 0.2 miles and 0.3 miles east of the project site, respectively.

The proposed project site contains two historical adobe structures (the Domingo Yorba Adobe and the Manuel Garcia Adobe), structural additions to the adobes, and a garage barn. The site is currently used as a residence. The project would redevelop the site into a hotel property, revitalize the two adobe structures into hotel and hotel amenity buildings, and construct six additional hotel buildings, a courtyard, a spa, a pool with a shade structure, a building housing a 66-stall mechanical car-lift, and a five-space parking lot. The car-lift would be operated by a 24-hour valet service. The project would include 13 electric vehicle capable stalls[1] and would have connectivity to the Amtrak/Metrolink train station.

Refer to Attachment 02 for the proposed project site plan (Bickel Group Architecture, 2025).

[1] One electric vehicle capable stall would be located in the parking lot, while the remaining stalls would be part of the mechanical car- lift.

ATTACHMENT 9

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The proposed project would follow the site's existing uneven elevation where the western portion of the site by the rail line is lower in elevation than the eastern portion of the site by Camino Capistrano. Four of the project buildings (Buildings 1, 1A, 2, and 4; see Table 1 below) would be located at street-level in the eastern portion of the site while two of the project buildings (Buildings 3 and 5; see Table 1 below) would be built on grade at rail-level in the western portion of the site. Two of the buildings (Buildings 1A and 2, see Table 1 below) that would be located at street-level would have basements accessible at rail-level. Using the natural grade of the site avoids the need for extensive excavation for the basements. In total, the proposed hotel development would have five buildings with 70 hotel rooms, three ancillary use buildings including a restaurant (see Table 1), and a car-lift parking structure. The total square footage of the buildings would be approximately 55,801 square feet.

Table 1: Project Building Descriptions

Building Name	Use	Stories	Hotel Keys	Building Area (sq ft)
Building 1	Hotel and Ancillary Use	2	2	3,400
Building 1A	Restaurant	1(A)	0	2,925
Building 2	Restaurant/Event Space	1(A)	0	6,274
Building 3(B)	Hotel	3	67	39,249
Building 4	Hotel and Dining Area	1	1	1,493
Building 5	Car Lift	1(C))	0	2,460
Total			**70**	**55,801**

Source: Bickel Group Architecture, 2025
(A) The one-story building would also have a basement level below. .
(B) Building 3 would consist of Buildings 3A, 3B, and 3C, which would have 16 keys, 31 keys, and 20 keys, respectively.
(C) The car lift located inside the building would have six levels.

The proposed courtyard, which would include a pool, spa, landscaped area, would be located in the western portion of the site, and would be surrounded by the three wings of Building 3 to the north, east, and south. There would be approximately 13,450 square feet of landscaping throughout the site. A driveway in the northeastern corner of the site would provide site access from Camino Capistrano. This driveway would lead to the small parking lot in the northern portion of the site and to the car-lift in the southern portion of the site, which would be operated by valets.

The site would include a six-foot high masonry wall along the western property line, except for a portion in front of the spa area, which would have an eight-foot high masonry wall. Segments of the central and eastern portion of the site, such as between the drive aisle and outdoor parking lot, between the drive aisle and loading zone, and between Building 2 and Building 5, would have masonry walls of varied heights.

The proposed project is anticipated to include minor demolition, renovation of the historical adobes, and new construction activities. The project would demolish the structural addition portions of the two adobes and the entirety of the existing barn, the materials from which would be salvaged and reused in the new hotel development. Project construction is anticipated to begin as soon as 2026 and last approximately 12 months (see Table 2). Project operation is anticipated to begin in 2027.

Table 2: French Hotel Project Construction Activities		
Construction Phase	**Construction Schedule**	**Anticipated Equipment Used**
Demolition	January 2026	Excavators
Site Preparation	January 2026 – February 2026	Dozer, Water Truck, Loader
Grading	February 2026	Dozer, Water Truck, Loader
Trenching	February 2026	Backhoe, Dump Truck
Building Construction (Foundation)	February 2026 – March 2026	Backhoe, Concrete Pump
Building Construction (Vertical)	March 2026 – September 2026	Telehandler, Lift
Building Construction (MEP/Other)	September 2026 – November 2026	Telehandler, Lift
Paving	November 2026	Cement and Mortar Mixer, Paver, Roller, Paving Equipment, Backhoe
Architectural Coating	November 2026 – December 2026	Air Compressor

The following sections describe the existing noise and vibration levels at the project site, identify noise-sensitive receptors, summarize application regulations pertaining to noise and vibration, and evaluate the proposed project's potential noise and vibration impacts.

EXISTING NOISE AND VIBRATION LEVELS

MIG conducted ambient noise level monitoring at the proposed project site from approximately 2:00 PM on Monday, April 24, 2023, to 2:00 PM on Tuesday, April 25, 2023 (see Attachment 02). The ambient noise levels were digitally measured and stored using one (1) Larson Davis SoundTrack LxT sound level meter that meets American National Standards Institute requirements for a Type 1 integrating sound level meter and one (1) Piccolo II, Type 2 sound level meter. Measurements were continuously collected over the sample period in 1-minute intervals. This interval was selected to capture short-term noise events and increases in noise levels above typical background conditions. Weather conditions during the monitoring ranged from overcast to clear and sunny and temperatures ranged from the low 50's (overnight) to the mid 60's (in the afternoon). Wind conditions were generally calm.

The ambient noise monitoring consisted of one (1) long-term (LT) and two (2) short-term (ST) locations selected to:

- Provide direct observations of existing noise sources and typical ambient noise levels at and near the proposed project site;
- Evaluate potential project noise levels at nearby sensitive receptors (see "Sensitive Receptors" below).

The ambient noise monitoring locations are described below and shown on Figure 1.

- **LT-1** was near the site's western property line, approximately 31 feet from the center of the nearest Amtrak/Metrolink rail line.
- **ST-1** was near the site's eastern property line, approximately 32 feet from the center of Camino Capistrano.

- **ST-2** was in the center of the site, approximately 170 feet from the center of the nearest Amtrak/Metrolink rail line and 240 feet from the the center of Carmino Capistrano (but shielded from the road by the Manuel Garcia and Domingo Yorba Adobes).

Based on observations during the monitoring, passenger, commuter, and freight rail activity and local commercial activities are the primary contributors to the ambient noise environment near the site. The LT and ST ambient noise monitoring results are summarized in Table 3 and Table 4, respectively. Refer to Attachment 03 for detailed ambient noise monitoring results.

Figure 1: Ambient Noise Monitoring Locations



Table 3: Summary of Measured Long-Term Ambient Noise Levels							
Day / Site	**Duration**	**L_{min}**	**L_{max}**	**Measured Hourly L_{eq} Range (dBA)(A)**			**Calculated 24-Hour CNEL(B)**
				Daytime (7 AM to 7 PM)	**Evening (7 PM to 10 PM)**	**Nighttime (10 PM to 7 AM)**	
2 PM Monday, April 24, 2023, to 2 PM Tuesday, April 25th, 2023							
LT-1	24 Hours	41.2	98.3	57.2 – 62.8	59.5 – 70.1	45.4 – 70.1	70.8
Source: MIG (See Attachment 03)							
(A) Values are the lowest and highest average hourly L_{eq} value during the listed time.							
(B) CNEL data is presented for a full 24-hour monitoring period (2 PM on 04/24/23 to 2 PM on 4/25/23).							

Table 4: Summary of Measured Short-Term Ambient Noise Levels				
Day / Site	**Duration**	**Measured Noise Level (dBA)**		
		L_{min}	**L_{max}**	**L_{eq}**
Monday, April 24, 2023 (2:10 PM to 2:39 PM)				
ST-1	30 minutes	48.7	82.8	62.1
LT-1	30 minutes	49.8	67.6	54.4
Monday, April 24, 2023 (4:16 PM to 4:45 PM)				
ST-2	30 minutes	48.2	87.2	61.5
LT-1	30 minutes	49.9	87.8	62.9
Monday, April 24, 2023 (5:20 PM to 6:20 PM)				
ST-1	60 minutes	49.1	87.2	62.2
LT-1	60 minutes	50.0	83.5	58.4
Tuesday, April 25, 2023 (12:07 PM to 1:46 PM)				
ST-1	100 minutes	48.6	87.2	62.8
LT-1	100 minutes	48.8	88.6	61.3
Tuesday, April 25, 2023 (6:30 PM to 10:00 PM)				
ST-1	210 minutes	44.7	79.7	57.8
Source: MIG (see Attachment 03)				

As shown in Table 3, measured hourly noise levels at the proposed project site were consistently above 57 dBA L_{eq} during daytime and evening periods, reaching up to 70 dBA L_{eq} during hours with freight train activity. Nighttime hours were generally quieter, but also reached up to 70 dBA L_{eq} due to freight rail activity. As shown in Table 3 and Table 4, overall noise levels are similar across the site. While the western half of the site (LT-1, ST-2) is more impacted by shorter, relatively higher railroad noise that reached 70 dBA L_{eq}, the eastern part of the site (ST-1) is exposed to more consistent but relatively lower traffic noise levels that were less than 63 dBA L_{eq}. The calculated CNEL value at LT-1 was 70.8 dBA.[2]

[2] The calculated CNEL is based on weekday Amtrak (20 total trains) and Metrolink (11 total trains) activity, which is higher than weekend activity (Metrolink, 2023). The calculated CNEL included at least four (4) and possibly as many as six (6) freight train

Rail Vibration Monitoring

MIG also conducted ground vibration monitoring at the project site on Tuesday, April 25, 2023. (see Attachment 04). Groundborne vibration levels were measured and stored using one (1) Instantel Minimate plus vibration monitor with triaxial geophone securely affixed to the ground via ground spikes approximately 29 feet from the center of the nearest Amtrak/Metrolink rail line (location V-1, see Figure 1). Vibration levels were measured during six (6) discrete train events, including three (3) Amtrak Surfliner trains, two (2) Metrolink trains, and one (1) freight train. It is noted that Amtrak and Metrolink train speeds were low as trains were either arriving to or departing from the San Juan Capistrano Metrolink station adjacent to the site. Similarly, freight trains were also observed to generally travel at low speeds adjacent to the site (estimated at less than 35 miles per hour). The highest peak particle velocity (PPV) level recorded in any direction, 0.106 in/sec, was for a longitudinal wave during the pass by of the freight locomotive.[3] The corresponding vibration velocity level, in decibels (VdB) is 88.6 VdB (refer to Attachment 04 for detailed vibration monitoring results).[4]

APPLICABLE NOISE AND VIBRATION REGULATIONS

The noise and vibration regulations that are applicable or relevant to the evaluation of the proposed project's potential noise and vibration impacts are summarized below.

Federal Transit Administration (FTA)

No federal regulations apply to noise or vibration from the proposed project, but the FTA's 2018 Transit Noise and Vibration Impact Assessment Manual document sets groundborne vibration annoyance criteria for general assessments. The criteria vary by the type of building being subjected to the vibrations, and the overall number of vibration events occurring each day. Category 1 buildings are considered buildings where vibration would interfere with operation, even at levels that are below human detection. These include buildings with sensitive equipment, such as research facilities and recording studios. Category 2 buildings include residential lands and buildings were people sleep, such as hotels and hospitals. Category 3 buildings consist of institutional land uses with primarily daytime uses. The FTA standards vary for "frequent" events (occurring more than 70 times per day, such as a rapid transit project), "occasional" events (occurring between 30 to 70 times per day), and "infrequent" events (occurring less than 30 times per day). The FTA's vibration annoyance (criteria are summarized in Table 5.

events. While daily freight train events are variable, the calculated CNEL is considered representative of existing conditions. Future noise conditions are not expected to deviate by more than 1 dBA to 2 dBA from existing levels due to increase rail activity.

[3] Groundborne vibrations consist of compression or primary waves, shear or secondary waves, and Rayleigh or surface waves (see Attachment 01).

[4] The FTA's Traffic Noise and Vibration Impact Assessment Manual (2018) includes generalized ground surface vibration curves equations for use in evaluating rail vibration impacts. For a locomotive-powered freight train travelling at 50 miles per hour, the generalized curves predict a VdB level of 88.8 at a distance of 29 feet from the center of the track, compared to the measured level of 88.6 VdB; however, as noted, trains were observed to be travelling at speeds less than 50 miles per hour. Site measurements are assumed to account for specific train type, speed, vehicle parameters, track conditions and treatments, and ground propagation effects and are applied for the purposes of evaluating potential vibration annoyance concerns. Adjustments for distance and coupling of foundations are applied from measured vibration levels.

Table 5: FTA Ground-Borne Vibration Impact Criteria for General Assessment			
Vibration Land Use Category/Type	**Frequent Events**	**Occasional Events**	**Infrequent Events**
Category 1 – Buildings with sensitive equipment	65 VdB	65 VdB	65 VdB
Category 2 – Buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3 – Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB
Source: FTA, 2018			

State Building Standards Code

The California Building Standards Code is contained in Title 24 of the California Code of Regulations and consists of 11 different parts that set various construction and building requirements. Part 2, California Building Code, Section 1206, Sound Transmission, establishes sound transmission standards for interior walls, partitions, and floor/ceiling assemblies between adjacent dwelling units and sleeping units and between dwelling units and sleeping units and adjacent public areas. In summary, this code section requires:

- **Airborne Sound:** Walls, partitions, and floor-ceiling assemblies separating dwelling units and sleeping units from each other or from public or service areas shall have a sound transmission class (STC) of not less than 50 if laboratory tested or have a Normalized Isolation Class of not less than 45 if field tested (Section 1206.2).
- **Structure-borne Sound:** Floor-ceiling assemblies between dwelling units and sleeping units or between a dwelling unit or sleeping unit and a public or service area within the structure shall have an impact insulation class rating of not less than 50 if laboratory tested or have a Normalized Impact Sound Rating of not less than 45 if field tested. Impact sound insulation is not required for floor-ceiling assemblies over nonhabitable rooms or spaces not designed to be occupied such as garages, mechanical rooms, and storage areas (Section 1206.3).
- **Allowable Interior Noise Levels:** Interior noise levels attributable to exterior noise sources shall not exceed 45 DNL or CNEL (as set by the local General Plan) in any habitable room.[5]

The California Green Building Standards (CALGreen) Code is Part 11 to the California Building Standards Code. Chapter 5, Nonresidential Mandatory Standards, establishes acoustical control requirements for non-residential buildings.[6] In summary, this code section requires:

- **Prescriptive Exterior Noise Transmission Control:** Wall and roof-ceiling assemblies that are part of the building envelope within the 65 CNEL noise contour of an airport or within the 65 DNL or 65 CNEL noise contour of a freeway, expressway, railroad, industrial source, or fixed-guideway source, shall meet a composite STC rating of at least 50 (with exterior windows a minimum STC of 40) or a composite Outdoor-Indoor Sound Transmission Class (OITC) of no less than 40 (with exterior windows a minimum OITC of 30) (Section 5.507.4.1). Buildings exposed to a noise of

[5] Title 24, Part 2, Section 202, Definitions, defines "habitable space" to be "space for living, sleeping, eating, or cooking." Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

[6] Section 5.507.4 excepts buildings with few or no occupants or where occupants are not likely to be affected by exterior noise from the non-residential acoustical control requirements, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking structures, and utilities buildings.

65 dB L_{eq} (1-hour) during any hour of operation shall have wall and roof-ceiling assemblies meeting a composite STC of at least 45 (or OITC of at least 35), with exterior windows a minimum STC of 40 (or OITC 30) (Section 5.507.4.1.1).

- **Performance Method Exterior Noise Transmission Control:** For buildings located within the 65 DNL, 65 CNEL, or 65 db L_{eq} (1-hour) areas described above, wall and roof-ceiling assemblies shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an L_{eq} (1-hour) of 50 dBA in occupied areas during any hour of operation (Section 5.507.4.2). This requirement shall be documented by preparing an acoustical analysis documenting interior sound levels prepared by personnel approved by the architect or engineer of record.
- **Interior Sound Transmission:** Wall and floor assemblies separating tenant spaces and tenant spaces and public spaces shall have an STC of at least 40 (Section 5.507.4.3).

California Department of Transportations (Caltrans)

The Caltrans' Transportation and Construction Vibration Guidance Manual provides a summary of vibration criteria that have been reported by researchers, organizations, and governmental agencies and provides recommended thresholds for evaluating potential vibration impacts on buildings (i.e., structural damage). These thresholds are summarized in Table 6. The thresholds vary depending on whether the vibration source is continuous or transient in nature. A transient source creates an isolated vibration event, such as blasting. Continuous sources also include sources with intermittent but frequent vibration events. While vehicle traffic is considered a continuous vibration source, many types of construction activities fall between continuous and transient in nature.

Table 6: Caltrans' Vibration Threshold Criteria for Building Damage

Structural 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 older buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial and commercial structures	2.0	0.5

Source: Caltrans, 2020

San Juan Capistrano General Plan

The City's General Plan Noise Element identifies transportation noise as the primary noise source within the City, with construction noise, manufacturing or business operations noise, and property maintenance activities also contributing to the City's noise environment. The Noise Element also establishes goals and policies to reduce existing and potential noise impacts (City of San Juan Capistrano, 1999). The following goals and policies from the Noise Element may be applicable to the proposed Project:

- Noise Goal 1: Minimize the effects of noise through proper land use planning.

  - Policy 1.1: Utilize noise/land use compatibility standards as a guide for future planning and development decisions.
  - Policy 1.2: Provide noise control measures and sound attenuating construction in areas of new construction or rehabilitation.
- Noise Goal 2: Minimize transportation-related noise impacts.
  - Policy 2.1: Reduce transportation-related noise impacts to sensitive land uses through the use of noise control measures.
  - Policy 2.2: Control truck traffic routing to reduce transportation-related noise impacts to sensitive land uses.
- Noise Goal 3: Minimize non-transportation-related noise impacts.
  - Policy 3.1: Reduce the impacts of noise-producing land uses and activities on noise-sensitive land uses.
  - Policy 3.2: Incorporate sound-reduction design in new construction or rehabilitation projects impacted by non transportation related noise.

A partial summary of the City's land use and noise compatibility matrix (for only the types of land uses that are in vicinity of the proposed project) is reproduced as Table 7. The City's General Plan establishes 60 dBA CNEL, 70 dBA CNEL, and 75 dBA CNEL as the normally acceptable, conditionally acceptable, and normally unacceptable noise levels transient lodging such as motels and hotels.

Table 7: Noise and Land Use Compatibility Matrix

Land Use Category	Community Noise Equivalent Level (CNEL), dBA[(A)]						
	55		60	65	70	75	80
Residential – Single family, multi-family, duplex, and mobile homes	A	A	B	B	C	--	--
Transient Lodging – Motels, hotels	A	A	B	C	C	--	--
Playgrounds, Neighborhood Parks	A	A	A	B	C	--	--
Office and Professional Buildings	A	A	A	B	B	C	--
Commercial Retail, Banks, Restaurants, Theaters	A	A	A	A	B	B	C

Source: City of San Juan Capistrano, 1999, Table N-3, modified by MIG. Refer to the General Plan for the full noise and land use compatibility matrix.

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

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

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

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

San Juan Capistrano Municipal Code

Title 5 (Public Welfare), Chapter 30 (Noise Regulations) of the City's Municipal Code generally prohibits loud noise and establishes that no person shall make, cause or suffer, or permit to be made any noise or sound that is unreasonably loud or disturbing to persons of ordinary sensitivity, or that is so harsh or so prolonged or unnatural or unusual in its use, time or place as to occasion discomfort to persons of ordinary sensitivity. This includes, but is not limited to, noise that is plainly audible from a distance of twenty-five (25) feet (Section 5-30.01(a)). Exceptions include emergency vehicles, safety devices, public works projects, school activities, and City or permitted community events.

Title 9, (Land use) Chapter 3, (Zoning Districts and Standards), Article 5 (Supplemental District Regulations) establishes the following exterior and interior noise standards for residential and non-residential land uses:

- Section 9-3.531 (b) Minimum Exterior Noise Standards: This section establishes the noise standards shown in Table 8 as the base of measurement for determining noise violations affecting residential, public and institutional, and commercial districts.

Table 8: Exterior Noise Standards

Noise Level	Time Period[(A)]
Residential and Public and Institutional Districts	
65 dBA	7:00 AM to 7:00 PM
55 dBA	7:00 PM to 10:00 PM
45 dBA	10:00 PM to 7:00 AM
Commercial Districts	
65 dBA	Any time of day

Source: City of San Juan Capistrano Municipal Code, Table 3-29, Table 3-30, and Table 3-31.
A) The noise standard cannot be exceeded by 20 dB(A) for any period of time, by 15 dB(A) for a cumulative period of more than 1 minute in any hour, by 10 dB(A) for a cumulative period of more than 5 minutes, by 5 dB(A) for a cumulative period of more than 15 minutes in any hour, or by any exceedance for a cumulative period of more than 30 minutes in any hour.

- Section 9-3.531 (c) Interior Noise Standards: This section establishes that no person shall create any noise which causes the noise level when measured inside a dwelling unit on any residential property during the period of 10 PM to 7 AM to exceed the noise standards in Table 8 for a cumulative period of more than five (5) minutes in any hour, the noise standard plus 5 dBA for a cumulative period of more than one (1) minute in any hour, or the noise standard plus 10 dBA for any period of time.
- Section 9.3-531 (d) Special Provisions: This section exempts certain activities from the City's noise standard, including:
    - Noise sources associated with construction, repairs, remodeling, or the grading of any real property, except that such activities shall not be exempt from the provisions of this section if conducted from 6:00 p.m. to 7:00 a.m. on Monday through Friday, or from 4:30 p.m. to 8:30 a.m. on Saturday, or at any time on Sunday or a national holiday (Section 9-3.53 (d) (4)).
    - Noise sources associated with the maintenance of real property used for residential purposes provided such activities take place from 7:00 a.m. to 8:00 p.m. on any day except Sunday or from 9:00 a.m. to 8:00 p.m. on Sunday, for example, mowing lawns and carpentry repairs (Section 9-3.53 (d) (8)).

Title 9, (Land use) Chapter 2, (Administration), Article 4 (Nuisances) establishes that the generation of vibration of a duration and intensity so as to be excessive, disturbing, or objectionable to persons of ordinary sensibility located off-site shall not be permitted.

NOISE AND VIBRATION IMPACT ANALYSIS

The following analysis evaluates if the proposed project would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in:
  - City General Plan Policy 1.1 (related to noise/land use compatibility planning); or
  - City Municipal Code Section 9-3.531 (Noise Standards)
- Generate excessive ground-borne vibration or ground-borne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

With regard to item b), the City's Municipal Code and General Plan do not establish specific vibration thresholds. Therefore, this analysis applies the structural damage criteria recommended by Caltrans to evaluate potential building damage impacts (see Table 5), while human annoyance is evaluated using the FTA's general assessment criteria for transit-related vibration impacts (see Table 5).

Project Construction (Temporary Increases in Ambient Noise Levels in Excess of Standards)

The proposed Project involves the construction of a multi-building hotel development over an approximately 50-week period. As shown in Table 2, project construction activities would include demolition, site preparation, grading, trenching, building construction, paving, and architectural coating activities. These types of construction activities could generate noise from the following sources:

- **Heavy equipment operations** throughout the project site. Some heavy equipment would consist of mobile equipment such as a loader, excavator, etc. that would move around work areas. Other equipment would consist of stationary equipment (e.g., air compressors) that would generally operate in a fixed location until work activities are complete. Heavy equipment generates noise from engine operation, mechanical systems and components (e.g., fans, gears, propulsion of wheels or tracks), and other sources such as back-up alarms. Mobile equipment generally operates at different loads, or power outputs, and produces higher or lower noise levels depending on the operating load. Stationary equipment generally operates at a steady power output that produces a constant noise level.
- **Vehicle trips**, including worker, vendor, and haul truck trips. These trips would occur on the roads that provide access to the project site, primarily Camino Capistrano.

The noise levels associated with the construction equipment that is most commonly used during these construction phases are shown in Table 9.

Table 9: Project Construction Equipment Noise Levels								
Equipment	**Noise Level at 50 feet (L_{max})**	**Percent Usage Factor(A)**	**Predicted Equipment Noise Levels (L_{eq})**					
			50 Feet	**75 Feet**	**100 Feet**	**150 Feet**	**200 Feet**	**250 Feet**
Bulldozer	85	40%	81	77	75	71	69	67
Backhoe	80	40%	76	72	70	66	64	62
Concrete mixer	85	40%	81	77	75	71	69	67
Crane	85	16%	77	74	71	67	65	63
Excavator	85	40%	81	77	75	71	69	67
Man Lift	85	20%	78	74	72	68	66	64
Paver	85	50%	82	78	76	72	70	68
Roller	85	20%	78	74	72	68	66	64
Delivery Truck	85	40%	81	77	75	71	69	67

Sources: Caltrans, 2013 and MIG (see Attachment 05).
(A) Usage factor refers to the amount (percent) of time the equipment produces noise over the time period.

As shown in Table 9, at a distance of 50 feet, potential construction equipment would produce a sustained noise level of up to 82 dBA L_{eq}; however, the actual magnitude of the project's potential temporary increase in ambient noise levels would depend on the specific amount and type of equipment in operation and the distance between the equipment operating area and the affected receptor. The commercial properties that border the proposed project to the north and south would be exposed to the highest potential construction noise levels because they are closest to the project site; however, commercial land uses are not considered noise sensitive receptors and, furthermore, these properties do not include any sensitive exterior use areas that would be impacted by construction noise.

The closest noise sensitive land uses to the project site are Veterans Park, located east of the site, across Camino Capistrano, and residential land uses, including residences in the Los Rios Historical District, to the west of the site, across the railroad and Los Rios Street. Veterans Park would not be impacted by project construction activities because the Manuel Garcia and Dominga Yorba Adobes would shield the park from construction noise generated on the interior of the site, and exterior work on the Adobes is not expected to generate substantial noise levels. The residences to the west of the site are located approximately 75 feet from the site boundary, 90 feet from anticipated work areas, and more than 250 feet from the center of the site. As shown in Table 9, potential construction equipment would produce sustained noise levels between 72 dBA L_{eq} to 78 dBA L_{eq} when operating along the site's western boundary (i.e., 75 feet from the residences), and between 62 dBA L_{eq} to 68 dBA L_{eq} when operating near the center of the site (i.e., 250 feet from the residences). As shown in Table 3, the typical daytime and evening noise levels along the rail corridor (LT-1) ranged from approximately 57 dBA L_{eq} to 70 dBA L_{eq}, Thus, potential construction activities could result in a temporary increase in ambient noise levels between 8 dBA L_{eq} and 21 dBA L_{eq} depending on work activities, distance to sensitive receptors, and other ambient noise sources in the vicinity of the project site.

Although the proposed project's construction activities would generate an audible, noticeable, and temporary increase noise levels in the vicinity of the project, the duration and magnitude of this effect would not be substantial for the following reasons:

- The project has been designed to avoid major excavation and shoring activities because basement and parking areas would be at grade-level..
- The project would incorporate construction means and methods for demolition and seismic and structural strengthening of the Manuel Garcia and Domingo Yorba Adobes that have a minimal impact on the structure (see "Ground-borne Vibration and Ground-borne Noise" section).
- Project construction is expected to last less than one year in total.
- The project would comply with Municipal Code requirements that limit construction activities to daytime hours only, when people are generally considered to be least sensitive to environmental noise levels.
- The applicant incorporated construction noise control measures into the project to reduce construction noise levels and minimize the potential for surrounding land uses to be disturbed or annoyed by construction activities.

The City's Municipal Code and General Plan do not establish numeric standards for construction noise levels (e.g., 90 dBA L_{eq}) provided construction activities occur within specified time periods. Accordingly, the applicant has incorporated construction noise control measures into the project (see below) that would provide advanced warning of potentially noisy construction activities, restrict work hours to periods when human are less sensitive to increase in ambient noise levels in accordance with Municipal Code requirements, reduce potential construction equipment noise levels, and prepare and plan for unanticipated or unexpected construction noise issues. By providing advanced notice of construction activities, implementing equipment controls, and conducting work within allowable time periods, the project would comply with the City's Municipal Code and reduce the potential for construction activities to generate noise levels that annoy or interfere with the normal use of surrounding residential and non-residential properties. For these reasons, the proposed project's construction activities would not generate a substantial, temporary increase in ambient noise levels in excess of applicable standards. This impact would be less than significant.

Construction Noise Control Measures

The applicant has incorporated the following construction noise control measures into the proposed project. Accordingly, these measures shall be included in all bid, contract, and engineering and site plan documents (e.g., grading and other improvement plans) developed for the project.

1) **Notify Surrounding Land Uses of Planned Construction Activities.** The project shall notify occupied residences/dwelling units within 200 feet of the project site, as well as occupied commercial properties that share a property line with site, of planned construction activities. The notice shall be provided at least seven (7) calendar days prior to the start of any construction activities (e.g., clearing, demolition, grading, etc.), describe the noise control measures to be implemented by the project, and include the name and phone number of the designated contact for the construction contractor and the City of San Juan Capistrano responsible for handling construction-related noise complaints (per Section 4 below).
2) **Restrict Work Hours per Municipal Code Section 9-3.531(d)(4):** All construction activities, including deliveries, shall be subject to the requirements of City Municipal Code Section 9-3.531(d)(4). Unless otherwise approved by the City, construction activities shall only occur during the following times:
    a. Monday through Friday: 7 AM to 6 PM.

b. Saturday: 8:30 AM to 4:30 PM.

Construction shall be prohibited on Sundays and national holidays: The construction contractor shall post a sign at all entrances to the construction site informing contractors, subcontractors, construction workers, etc. of this requirement.

3) **Construction Equipment Selection, Use, and Noise Control Measures.** The project has been designed to include the following noise control features that would limit the potential for construction noise:

   a. Construction staging activities such as receipt of deliveries, equipment and material storage, etc., shall occur as far away from residential land uses as possible.

   b. All stationary noise generating equipment such as pumps, compressors, and welding machines shall be shielded and located as far from sensitive receptor locations as practical. Shielding may consist of trailers, stored materials, or a three- or four-sided enclosure provided the structure/barrier breaks the line of sight between the equipment and the receptor and provides for proper equipment ventilation and operations.

   c. Heavy equipment shall include standard noise suppression devices such as mullers, engine covers, and engine/mechanical isolators, mounts, etc. Equipment and noise suppression devices shall be maintained in accordance with manufacturer's recommendations while on-site.

   d. Pneumatic tools shall include a noise suppression device on the compressed air exhaust.

   e. The project shall connect to existing electrical service to power stationary and portable equipment (e.g., pumps, generators, compressors, and welding sets). This measure shall be subject to the approval of the local electric utility. If it is not feasible to connect to electrical service and/or extend electrical service to all work sites, noise control measures 3.b shall be implemented.

   f. The use of vibratory rollers, vibratory/impact hammers, and other potential large vibration-generating equipment (e.g., hydraulic breakers, hoe rams) shall be prohibited at the site. Plate compactors and compactor rollers are acceptable.

4) **Prepare a Construction Noise Complaint Plan. The Construction Noise Complaint Plan would:**

   a. Identify the name and/or title and contact information (including phone number and email) for a designated project and City representative responsible for addressing construction-related noise issues.

   b. Include procedures describing how the designated project representative will receive, respond, and resolve construction noise complaints. At a minimum, upon receipt of a noise complaint, the project representative would notify the City, verify and determine the nature of the complaint (e.g., identify the noise source generating the complaint), and take steps to resolve the compliance such as, but not limited to, changing equipment operations, limiting operating times, or installing noise reduction measures such as a temporary shield, barrier, acoustic blanket, etc.

Project Operations (Permanent Increases in Ambient Noise Levels in Excess of Standards)

The proposed project site and surrounding properties to the north, south, and east (across Camino Capistrano) are all zoned Town Center District and considered general commercial land uses by the General Plan. The applicable exterior noise standard for such commercial uses is

65 dBA L_{eq} during any time of the day (see Table 8). The properties to the west of the project site (across the railroad and Los Rios Street) are residential and subject to lower exterior noise standards of 65 dBA L_{eq} (7 AM to 7 PM), 55 dBA L_{eq} (7 PM to 10 PM), and 45 dBA L_{eq} (10 PM to 7 AM). It is noted that, due to the presence of the railroad, the existing ambient noise environment at the residential properties along Los Rios Street already exceeds the City's standards.

The proposed project would generate noise from vehicle parking/ mechanical car lift activities, garbage collection activities, heating, ventilation, and air conditioning (HVAC) equipment, and other hotel operations (e.g., ancillary restaurant activities) and maintenance activities (e.g., pool maintenance). These noise sources would be similar to the noise generated by the existing commercial facilities adjacent to the site and would not be a new or unique source of noise in the vicinity of the project.

In general, hotels are not a substantial noise-generating land use type because they do not involve noise-generating activities during the nighttime and mechanical equipment associated with pools, elevators, and other building systems are typically enclosed within equipment rooms. The proposed Project's site layout and design includes a number of features that would limit the potential for noise to impact surrounding commercial and residential properties, including:

- Site Design: The proposed project would retain the Manuel Garcia and Domingo Yorba Adobes along Camino Capistrano. These buildings would both block traffic noise from impacting the interior of the site and reduce the amount of site noise that could impact commercial receptors across Camino Capistrano. The proposed project also surrounds the spa and pool area with three hotel buildings, effectively shielding the pool area from all property lines except the western property line, which would be shielded by a six to eight foot masonry wall.
- Site Layout: The proposed project places potential noise sources and noise-generating areas and activities, including the lobby, pool area, and outdoor dining spaces, on the interior of the site, set back from adjacent property lines.
- Pool Equipment and Garbage Enclosure: Pool pumps and other equipment would be within an enclosed room in the center of the site. Garbage would be enclosed in a three-sided, concrete block wall structure with metal gates along the fourth side and a metal roof.
- Music Equipment: The proposed project does <u>not</u> include any live, amplified or non-amplified music events or activities at the site. The pool area may include a small, amplified ambient music system at the pool area. This system would only operate when the pool and spa are open, would be shielded from the nearest off-site receptors by the six to eight foot wall along the western property line, and not be a substantial source of noise.

The exterior stationary noise generating equipment that could impact adjacent properties would be the proposed Project's HVAC system, which is anticipated to consist of an outdoor, split-system heat pump, such as a York R-410A model or similar (York, 2023), and a mechanical car lift. For the HVAC system, each room would have an individual, rooftop-mounted unit, with all units generally located in the center of each building. The maximum number of units on any building would be 42 (Building 3B), located approximately 85 feet from the southern property line. Additionally, Building 3C would have 18 units, and would be located approximately 30 feet from the southern property line. The maximum rated sound power rating for such a system could be up to 75 dBA. For the mechanical car lift, the ambient noise level would be approximately 50 dBA, and the maximum noise levels expected for vertical and horizontal movement would be approximately 59 dBA and 63 dBA, respectively, at a distance of 5 feet, the

approximate distance from Building 5 to the southern property line. The proposed project's estimated maximum HVAC and car lift noise level at the closest impacted property line is summarized in Table 10.

Table 10: Estimated Project Stationary Source Noise Levels

Source(s)	Sound Power Rating[A]	Distance to Southern Property Line	Estimated Hourly Noise Level (dBA L_{eq})		
			Lift Operation[A]	1 Heat Pump[B]	All Building Heat Pumps[C]
Building 3B Heat Pump	75 dBA	85 Feet	--	35.5	51.7
Building 3C Heat Pump	75 dBA	30 Feet	--	45.5	58.0
Car Lift	63 dBA	5 Feet	63.0	--	--
City Commercial Noise Standard (any time)[D]			65	65	65
Standard Exceeded?[E]			No	No	No

Source: MIG (see Attachment 05)

(A) The car lift is assumed to operate at a maximum of 63 dBA at 5 feet (Automated Parking Company 2025). The shielding from Building 5 is not accounted for in the estimation.

(B) Each York R-410 split-system heat pump unit is rated according to the American Hearing and Refrigeration Institute (AHRI) Standard 270. Sound power rating is a measure of how much sound power is emitted from a source. For typical point source propagation, sound pressure levels are equal to sound power levels at approximately 1-foot from the source.

(C) The estimated noise level at distance and with multiple sources in operation is calculated according to Equation 1 and Equation 4 shown in Attachment 01. All units are assumed to be in operation, and no shielding is assumed for the heat pump units.

(D) See Table 8.

(E) This table estimates noise levels for each stationary source at the nearest property line, the commercial property south of the proposed Project. This table uses the shortest distance between each source and the property line. Using the point for the highest noise source, the property line five feet from the car-lift, Building 3B and Building 3C distances would increase to approximately 110 feet and 175 feet, respectively. The combined noise levels for the car lift and all building HVAC units would be approximately 63.2 dBA.

As shown in Table 10, the proposed project's stationary sources would not generate noise levels that exceed the City of San Juan Capistrano's commercial exterior noise standard of 65 dBA L_{eq} In addition, individual (45.5 dBA L_{eq}) and cumulative (58.0 dBA L_{eq}) heat pump noise levels would be below most ambient daytime, evening, and nighttime noise levels measured at the site.

The closest residential property line is located more than 230 feet west of the closest on-site heat pump unit. At this distance, the operation of all 30 heat pumps of the nearest building at the same time would be approximately 40.3 dBA L_{eq}, which is below the City's residential exterior nighttime standard of 45 dBA L_{eq}.

It is noted the noise levels shown in Table 10 assume all building heat pump units and the car-lift are in operation for a full hour at the same time, and that there is no noise reduction achieved by shielding due to a parapet or roof wall for the heat pumps or Building 5 for the car-lift. These assumptions likely overestimate potential stationary source noise levels. Actual noise levels are likely to be lower than estimated in Table 10.

For the reasons described above, the proposed project would not generate on-site operational noise levels that exceed City standards or otherwise result in a substantial permanent increase in ambient noise levels in the vicinity of the project. This impact would be less than significant.

Off-site Traffic Noise Increases

In addition to on-site sources, the proposed Project would add vehicle trips to Camino Capistrano and other local roads used to access the site. Caltrans considers a doubling of total traffic volume to result in a three (3) dBA increase in traffic-related noise levels (Caltrans, 2013). According to the traffic generation forecast prepared for the proposed project, the project would add up to 57 new peak hour vehicle trips and 409 total daily vehicle trips on Camino Capistrano, which currently carries at least approximately 15,000 vehicles per day (City of San Juan Capistrano, 2019). The proposed project, therefore, would not double traffic volumes on Dalewood Street or any other local road used to access the site and would not result in a substantial permanent increase in traffic-related noise levels.

Ground-borne Vibration and Ground-borne Noise

As shown in Table 2, the proposed project would involve demolition, site preparation, grading, trenching, and paving activities that could involve the use of heavy-duty, off-road construction equipment capable of generating ground-borne vibrations; however, the historical nature of the Manuel Garcia and Domingo Yorba Adobes requires the applicant to incorporate construction means and methods for seismic and structural strengthening of the adobes that have a minimal and reversible impact on the structure's historic fabric. Specifically, the Structural Evaluation and Seismic Retrofit Recommendations report prepared for the project identifies specific means and methods to reinforce adobe walls, floor and roof elements, and balcony elements (Structural Focus, 2022). The report also specifically requires the use of:

- Demolition methods that limit vibration and incidental damage or contact with adobe walls, and
- Construction sequencing that places general repair of adobe walls prior to installation of any anchor rods.

The adaptive reuse of the historical adobes is a key objective of the proposed project. Accordingly, the project would incorporate the seismic retrofit recommendations developed for the project, as well as construction vibration control measures that would avoid potential structural damage to the on-site historic adobes, off-site historic structures in the Los Rios Historical District (across the railroad and Los Rios Street), and other buildings of modern construction near the site. Seismic and construction equipment vibration control measures would also reduce the potential for annoyance response to potential construction-induced vibrations. Furthermore, as described above, the project would comply with Municipal Code requirements that limit construction activities to daytime hours only, when people are not only less sensitive to increase in noise levels but also to groundborne vibrations. By using means and methods that reduce or avoid vibration, implementing equipment controls, and conducting work within allowable time periods, the project would avoid the generation of groundborne vibration and noise levels that could be damaging, excessive, or otherwise annoying. This impact would be less than significant.

Once operational, the proposed Project would not involve the operation of any large or vibration generating equipment that would generate excessive vibration levels.

Construction Vibration Control Measures

The applicant has incorporated the following construction vibration control measures into the proposed project. Accordingly, these measures shall be included in all bid, contract, and

engineering and site plan documents (e.g., grading and other improvement plans) developed for the project.

1) **Construction Sequencing:** The project shall adhere to the seismic and structural recommendations for adaptive reuse of the adobe structures, including any recommendations for the sequencing of construction activities that minimize potential vibration impacts to the adobes.

2) **Prohibit Vibratory Equipment.** The project shall prohibit the use of vibratory rollers, vibratory/impact hammers, and other potential large vibration-generating equipment (e.g., hydraulic breakers, hoe rams, large tracked equipment) at the site. Plate compactors and compactor rollers are acceptable.

    a. If it is not feasible to prohibit the use of vibratory equipment within 50 feet of the parts of the adobe structures to remain on-site, the construction contractor shall, in consultation with a licensed structural engineer, develop a project-specific construction vibration plan that identifies planned vibration-generating construction activities and potential ground-borne vibration levels (given specific equipment and soil conditions) at the adobe structures and the vibration control measures that will be employed to ensure equipment and work activities would not result in vibrations that exceed Caltrans' damage criterion for historic and older buildings of 0.25 inches/second peak particle velocity. Such measures may include but are not limited to the use of vibration monitoring to measure actual vibration levels, the use of photo monitoring or documentation of building conditions prior to, during, and after construction activities, and/or the use of trenches or barriers that attenuate ground-borne vibration.

Airport-Related Noise

The proposed project site is not located in the vicinity of any airport facilities. The closest airport, John Wayne Airport, is located approximately 16.8 miles northwest of the project site. The closest heliport, Helicopter Outlying Airfield, is located approximately 8.7 miles southeast of the project site. The proposed project, therefore, would not expose people residing or working in the project area to excessive aircraft- or airport-related noise levels.

OTHER NOISE AND LAND USE PLANNING ISSUES

The California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015) ruled that CEQA review is focused on a project's impact on the environment "and not the environment's impact on the project." Per this ruling, a Lead Agency is not required to analyze how existing conditions might impact a project's existing or future population except where specifically required by CEQA; however, a Lead Agency may elect to disclose information relevant to a project even if it not is considered an impact under CEQA. Furthermore, the City's General Plan sets noise standards for receiving land uses which require evaluation for consistency and compliance, even if such evaluation is not required by CEQA to be identified as a physical impact of the project.

The City's General Plan establishes 70 CNEL as the normally unacceptable noise level for transient lodging land uses such as hotels (see Table 7). As shown in Table 3, the calculated CNEL at LT-1 was approximately 71 dBA. The proposed Project would include a masonry wall that would shield the property from off-site noise sources such as the rail corridor, and would reduce noise levels below 70 CNEL. Exterior noise levels would therefore be below the normally unacceptable range.

This City's General Plan specifies that if new construction or development is undertaken, an analysis of the noise insulation measures needed to achieve interior noise standards is required. The two exterior building façades closest to the Metrolink rail corridor are the western

façades associated with Building 3A and Building 3C, which are approximately 18 and 20 feet from the project property line, respectively (and 42 and 45 feet from the center of the railroad track, respectively). Assuming a minimum 5 dBA reduction from the masonry wall along the western perimeter, at this distance, the noise level at the western façade for Building 3A is estimated to be up to 64.5 CNEL, while the noise level at the western façade for Building 3C is estimated to be 64.2 CNEL. Therefore, the proposed building façades would need to achieve between 19.2 dBA (Building 3C) and 19.5 dBA (Building 3A) of exterior to interior noise reduction to meet interior noise levels of 45 CNEL.

To meet interior noise standards, the project proposes the façade of Building 3A and Building 3C to consist of the following assembly (from exterior to interior): a 7/8-inch exterior stucco cement board over nominal 2-inch by 6-inch studs spaced 24-inches apart and filled with 6-inch-thick fiberglass insulation and 5/8-inch gypsum wall board. This type of wall assembly would have a Sound Transmission Class (STC) rating of 51 dBA and an Outdoor-Indoor Transmission Class rating of 31, meaning it would provide at 31 dBA of exterior to interior noise reduction associated with typical exterior noise sources, including transportation noise (see Attachment 06), which is more than the approximately 20 dBA of exterior to interior noise reduction necessary to meet interior building code standards. The western facades of Buildings 3A and 3B do not have patios, decks, or sliding doors. For Buildings 3A and 3C, the project will have forced air mechanical ventilation in all units to permit occupancy of units with windows closed. Solid core doors shall be used in all non-sliding exterior door designs. All window and door assemblies (including sliding doors) shall be well-fitted, sealed, and weather-stripped. Window and door assemblies (perimeter of assembly and any gaps during assembly installation) shall be sealed with an acoustical caulk/sealant to reduce noise transmission.

Rail Corridor Vibration

As described above, the highest peak particle velocity (PPV) level recorded in any direction, 0.106 in/sec, was for a longitudinal wave during the pass by of a freight locomotive. The corresponding vibration velocity level for this event, in decibels (VdB) is 88.6 VdB (refer to Attachment 04 for detailed vibration monitoring results). The maximum vibration levels for Amtrak (77.5 VdB) and Metrolink (75.9 VdB) trains was lower than freight trains due to the smaller size of these trains. These VdB levels were measured at a distance of 29 feet from the center of the railroad track nearest to the project site (location V-1, see Figure 1). This location lies in a proposed landscape buffer near the site's western property boundary, where potential train-related vibrations would not be of concern. As described above, the two exterior building façades closest to the Metrolink rail corridor are the western façades associated with Building 3A and Building 3C, which are 18 and 20 feet from the project property line, respectively (and 42 and 45 feet from the center of the railroad track, respectively). Exterior use areas and hotel rooms would also be located on a podium structure, which limits the potential for direct transmission of groundborne vibrations to interior areas. Like noise, groundborne vibration also attenuates with distance from the source; energy is also lost when vibrations are transferred from the ground to the building foundation and subsequently through building materials. The FTA's methodology for general vibration assessments estimates that masonry on pile foundations provides at least 10 VdB of vibration reduction (FTA 2018). Combined, distance and podium foundation design are estimated to result in a minimum 13 VdB reduction in ground-borne vibration at occupied units. The estimated vibration levels at Building 1A and Building 1C are summarized in Table 11.

Table 11: Estimated Vibration Levels at Building 1A and Building 1C					
Event Category[A]	**Events per Day**	**FTA Impact Criteria[B]**	**Estimated VdB[C]**		**FTA Criteria Exceeded?**
			Building 3A	**Building 3C**	
Infrequent Events (<10 day)					
Freight Locomotive	≤ 10	80	85.3	84.7	Yes
Occasional Events (30 to 70 events per day)					
Freight Cars	≤20[D]	75	83.3	82.7	Yes
Amtrack Train	20	75	73.1	72.5	No
Metrolink Train	12	75	75.0	74.4	No

Source: FTA, 2018 and MIG (see Attachment 04)

(A) Events are categorized according to the FTA general vibration assessment criteria, which recommends evaluating freight locomotive and freight car/non-freight train events separately. The number of events per day is not anticipated to substantially change in the future.

(B) See Table 5.

(C) Estimated VdB assumed Building 3A and Building 3C are located 42 and 45 feet from the center of the nearest track, on an elevated podium.

(D) Freight car frequency assumes up to two minute of freight car pass by activity for each freight train.

As shown in Table 11, Buildings 3A and 3C of the proposed project may be exposed to groundborne vibration levels that exceed FTA criteria during occasional and infrequent events involving freight cars and locomotives. The majority of the site would not be exposed to vibration that exceeds FTA thresholds.

CONCLUSION

As described in this memo, the proposed Project would not generate a substantial temporary or permanent increase in noise levels that would exceed the City's standards, would not generate excessive ground-borne vibration or ground-borne noise levels, and would not expose people residing or working in the Project area to excessive aircraft noise levels. The proposed Project, therefore, would not result in a substantial, adverse noise-related effect on the environment.

The proposed project would also be compatible with the noise environment at the project site with the incorporation of interior noise compatibility measures that would achieve interior noise levels of 45 CNEL where necessary. The project is anticipated to be incompatible with vibration criteria in the westernmost portion of the site.

PREPARERS AND REFERENCES

This study was prepared by MIG under contract to the City of San Juan Capistrano. This study reflects the independent, objective, professional opinion of MIG. The following individuals were involved in the preparation and review of this study:

MIG

Kasey Kitowski, Air Quality and Noise Analyst III
kkitowski@migcom.com
6809 Indiana Avenue Suite 203
Riverside, California 92507

Chris Dugan, former MIG Director of Air Quality, GHG, and Noise Services

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Attachment 01

Environmental Noise Background

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NOISE BACKGROUND

Noise may be defined as loud, unpleasant, or unwanted sound. The frequency (pitch), amplitude (intensity or loudness), and duration of noise all contribute to the effect on a listener, or receptor, and whether the receptor perceives the noise as objectionable, disturbing, or annoying.

The Decibel Scale (dB)

The decibel scale (dB) is a unit of measurement that indicates the relative amplitude of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a tenfold increase in acoustic energy, while 20 dBs is 100 times more intense, 30 dBs is 1,000 more intense, and so on. In general, there is a relationship between the subjective noisiness, or loudness of a sound, and its amplitude, or intensity, with each 10 dB increase in sound level perceived as approximately a doubling of loudness. Due to the logarithmic basis, decibels cannot be directly added or subtracted together using common arithmetic operations:

$$50\ decibels + 50\ decibels\ \neq 100\ decibels$$

Instead, the combined sound level from two or more sources must be combined logarithmically. For example, if one noise source produces a sound power level of 50 dBA, two of the same sources would combine to produce 53 dB as shown below.

$$10 * \ 10\ log\left(10^{\left(\frac{50}{10}\right)} + \ 10^{\left(\frac{50}{10}\right)}\right) = 53\ decibels$$

In general, when one source is 10 dB higher than another source, the quieter source does not add to the sound levels produced by the louder source because the louder source contains ten times more sound energy than the quieter source.

Sound Characterization

There are several methods of characterizing sound. The most common method is the “A-weighted sound level,” or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is typically most sensitive. Thus, most environmental measurements are reported in dBA, meaning decibels on the A-scale.

Human hearing matches the logarithmic A-weighted scale, so that a sound of 60 dBA is perceived as twice as loud as a sound of 50 dBA. In a quiet environment, an increase of 3 dB is usually perceptible, however, in a complex noise environment such as along a busy street, a noise increase of less than 3 dB is usually not perceptible, and an increase of 5 dB is usually perceptible. Normal human speech is in the range from 50 to 65 dBA. Generally, as environmental noise exceeds 50 dBA, it becomes intrusive and above 65 dBA noise becomes excessive. Nighttime activities, including sleep, are more sensitive to noise and are considered affected over a range of 40 to 55 dBA.

Sound levels are typically not steady and can vary over a short time period. The equivalent noise level (L_{eq}) is used to represent the average character of the sound over a period of time. The L_{eq} represents the level of steady noise that would have the same acoustical energy as the sum of the time-varying noise measured over a given time period. L_{eq} is useful for evaluating shorter time periods over the course of a day. The most common L_{eq} averaging period is hourly, but L_{eq} can describe any series of noise events over a given time period.

Variable noise levels are values that are exceeded for a portion of the measured time period. Thus, L_{01} is the level exceeded one percent of the time and L90 is the level exceeded 90 percent of the time. The L_{90} value usually corresponds to the background sound level at the measurement location.

Noise exposure over the course of an entire day is described by the day/night average sound level, or DNL (also referred to as L_{dn}), and the community noise equivalent level, or CNEL. Both descriptors represent the 24-hour noise impact on a community. For DNL, the 24-hour day is divided into a 15-hour daytime period (7 AM to 10 PM) and a nine-hour nighttime period (10 PM to 7 AM) and a 10 dB "penalty" is added to measure nighttime noise levels when calculating the 24-hour average noise level. For example, a 45-dBA nighttime sound level would contribute as much to the overall day-night average as a 55-dBA daytime sound level. The CNEL descriptor is similar to DNL, except that it includes an additional 5 dBA penalty beyond the 10 dBA for sound events that occur during the evening time period (7 PM to 10 PM). The artificial penalties imposed during DNL and CNEL calculations are intended to account for a receptor's increased sensitivity to sound levels during quieter nighttime periods.

Sound Propagation

The energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out and travels away from the noise generating source. Theoretically, the sound level of a point source attenuates, or decreases, by 6 dB with each doubling of distance from a point source. Sound levels are also affected by certain environmental factors, such as ground cover (asphalt vs. grass or trees), atmospheric absorption, and attenuation by barriers. Outdoor noise is also attenuated by the building envelope so that sound levels inside a residence are from 10 to 20 dB less than outside, depending mainly on whether windows are open for ventilation or not.

For an ideal "point" source of sound, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a spherical pattern and travels away from the point source. Theoretically, the sound level attenuates, or decreases, by 6 dB with each doubling of distance from the point source. The change in noise levels between two distances can be calculated according to Equation 1 (California Department of Transportation (Caltrans), 2013a) as follows:

Equation 1

$$dBA2 = dBA1 + 20\log (D1/D2)$$

Where:

dBA1 = Known noise level, such as a reference noise level
D1 = Distance associated with dBA1
dBA2 = Noise level at distance 2
D2 = Distance associated with dBA2

For an ideal line source of sound, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a cylindrical pattern from the source. Theoretically, the sound level attenuates, or decreases, by 3 dB with each doubling of distance from the line source. The change in noise levels between two distances can be calculated according to Equation 2 as follows:

Equation 2

$$dBA2 = dBA1 + 10\log (D1/D2)$$

Where:

dBA1 = Known noise level, such as a reference noise level
D1 = Distance associated with dBA1
dBA2 = Noise level at distance 2
D2 = Distance associated with dBA2

For noise sources that do not operate continuously (e.g., vehicles and trucks that travel on-site, park, and then cease to generate noise),the average, hourly noise level associated with variable (i.e., non-steady) noise source can be calculated using Equation 3 as follows:

Equation 3

$$Hourly\ L_{eq} = 10 * Log\ (P_h) * 10^{(Lp/10)}$$

Where:

P_h = Percentage or fraction of hour the noise is generated

L_p = The noise level generated during the partial hour (P_h)

Finally, the total combined sound pressure level from multiple, identical sources of noise at a receiver location can be calculated using Equation 4 as follows:

Equation 4

$$SPL_{Total} = SPL_1 + 10 * Log\ (N)$$

Where:

SPL_1 = Sound pressure level of one source

N = Number of identical sources to be added

Noise Effects on Humans

Noise effects on human beings are generally categorized as:

- Subjective effects of annoyance, nuisance, and/or dissatisfaction
- Interference with activities such as speech, sleep, learning, or relaxing
- Physiological effects such as startling and hearing loss

Most environmental noise levels produce subjective or interference effects; physiological effects are usually limited to high noise environments such as industrial manufacturing facilities or airports.

Predicting the subjective and interference effects of noise is difficult due to the wide variation in individual thresholds of annoyance and past experiences with noise; however, an accepted method to determine a person's subjective reaction to a new noise source is to compare it the existing environment without the noise source, or the "ambient" noise environment. In general, the more a new noise source exceeds the ambient noise level, the more likely it is to be considered annoying and to disturb normal activities.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness that would almost certainly cause an adverse response from community noise receptors.

When exposed to high noise levels, humans may suffer hearing damage. Sustained exposure to high noise levels (e.g., 90 dBs for hours at a time) can cause gradual hearing loss, which is usually temporary, whereas sudden exposure to a very high noise level (e.g., 130 to 140 dBs) can cause sudden and permanent hearing loss. In addition to hearing loss, noise can cause stress in humans and may contribute to stress-related diseases, such as hypertension, anxiety, and heart disease (Caltrans, 2013).

Vibration

Vibration is the movement of particles within a medium or object such as the ground or a building. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared, in inches per second (in/sec). PPV represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage. Human response to groundborne vibration is subjective and varies from person to person.

Attachment 02

Project Site Plan (Bickel Group Architecture, 2025)

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INSERT SITE PLAN.

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Attachment 03

Ambient Noise Monitoring Data

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INSERT AMBIENT NOISE MONITORING DATA.

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Attachment 4
Vibration Monitoring Data

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INSERT VIBRATION MONITORING DATA.

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Attachment 05

Project Noise Level Estimates

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INSERT REFERENCE AND PROJET NOISE LEVEL ESTIMATES.

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Attachment 06

Preliminary Exterior Wall Assembly Exterior to Interior Noise Reduction Level

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INSERT EXTERIOR TO INTERIOR NOISE REDUCTION MODELING.

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