

# NOISE TECHNICAL MEMORANDUM

**To:** Mr. Addison Garza  
**From:** Sharon Toland  
**RE:** Noise Compatibility Analysis for the Aspire Project in Escondido, CA  
**Date:** August 1, 2019  
**Att:** A, Roadway Construction Noise Model Results  
B, Federal Highway Authority Noise Prediction Model Results

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This memorandum provides the results of Harris & Associates' analysis of the potential environmental noise compatibility impacts of the proposed Aspire Project (project) related to construction and operational noise and vibration.

## Project Description

This proposed Aspire Project is located within the City of Escondido (City) at 137 West Valley Parkway. The project would consist of the construction of a six-story mixed-use building that includes 131 residential units including 9 units reserved for Very Low Income Households, 229 parking spaces, common areas and amenities, and approximately 4,289 square feet (sf) of ground floor commercial space situated on property in the Downtown Specific Planning Area on 1.04 gross acres (1.03 net acres). The site currently consists of the existing City Public Parking Lot #1 with some landscaped planters and lighting.

The proposed project site is located in the developed and urban area of downtown Escondido. According to the Downtown Specific Plan (City of Escondido 2013), the project site lies within the Historic Downtown District. Immediately surrounding land uses to the project site consists of primarily commercial and retail uses. Directly north of the project site lies West Valley Parkway, a major arterial road that serves the City of Escondido, followed by Escondido City Hall and the California Center for the Arts, Escondido, on the north side of the street. A bank with surface parking lot surrounding the building borders the project site to the east and a one-way alley that services commercial businesses fronting Grand Avenue lies directly south. These commercial uses include restaurants, a salon, and bridal shop. Maple Street Plaza, a pedestrian plaza with a fountain, landscaping, lighting, benching, and trellises, borders the site to the west.

Construction of the proposed project is anticipated to begin in late 2019 and take approximately 20 months to complete. Grading and site preparation would be accomplished first; construction of the buildings, including architectural coating, would occur subsequently. Standard equipment expected to be used on the site would include a bulldozer, front-end loader, backhoe, grader, forklift, air compressor, welders, and generator. The project would involve 19,000 cubic yards (cy) of cut to include the demolition of the existing parking lot and the constructing of the underground parking structure. The total export from the project site would be disposed of at a permitted facility.

## **Background**

### **Noise**

The California Department of Transportation (Caltrans) 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 the sound. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, 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, the 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 community noise equivalent level (CNEL) is the average equivalent A-weighted sound level over a 24-hour period. This measurement applies weights to noise levels during evening and nighttime hours to compensate for the increased disturbance response of people at those times. CNEL is the equivalent sound level for a 24-hour period with a +5 dBA weighting applied to sound occurring between 7:00 p.m. and 10:00 p.m. and a +10 dBA weighting applied to sound occurring between 10:00 p.m. and 7:00 a.m. (City of Escondido 2012a).

The decibel 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 typically decreases by about 6 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 3 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 manmade obstacles such as buildings and sound barriers (Caltrans 2013).

Noise-sensitive land uses include noise receptors (receivers) where an excessive amount of noise would interfere with normal activities. The City of Escondido General Plan Community Protection Element lists residential development, care facilities, schools, churches, transient lodging, hospitals, health care facilities, libraries, museums, cultural facilities, golf courses, and passive recreational sites as sensitive receptors. Community noise sources defined as common indoor and outdoor noise sources are also identified in the Community Protection Element. Commercial, general office and industrial land uses are not considered noise-sensitive land uses. Specific community noise sources of note include the City's roadway network (including Interstate 15 and State Highway 78), the North County Transit District Sprinter commuter rail service, two firing ranges, and flight operations to and from McClellan-Palomar Airport and helicopter travels to and from Palomar-Pomerado Hospital (City of Escondido 2012a).

Vehicle noise is the main source of ambient noise in the project site vicinity. No project-specific noise measurements were conducted for the proposed project because noise contours for vehicular traffic in the Downtown Specific Plan area were calculated under existing and horizon year conditions for the EIR for the City of Escondido General Plan, Climate Action Plan, and Downtown Specific Plan Update (City of Escondido 2012b). These noise contours are considered to be adequate and conservative to represent noise conditions on the project site because the Future 2030 Noise Contours assume buildout conditions in the project area. Therefore, these contours assume a higher traffic volume than existing conditions, and demonstrate higher associated traffic noise. According to the EIR, the northern portion of the project site is within the existing 65 dBA CNEL and 60 dBA CNEL noise contours for West Valley Parkway (Figure 4.12-1, City of Escondido 2012b). Under the Future 2030 Noise Contour scenario, the northern portion of the project site is within the 70, 65, and 60 dBA CNEL contours for West Valley Parkway and the western portion of the site is within the 60 dBA CNEL contour for West Grand Avenue.

The anticipated primary project operational noise sources include vehicular traffic; heating, ventilation and air conditioning (HVAC) systems; trash and recycling removal; and nuisance noise.

### ***Ground-borne Vibration***

The Federal Transit Administration (FTA) describes ground-borne vibration as vibration that can cause buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne 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. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment. The effects of ground-borne 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. Ground-borne vibration related to potential building damage effects is generally related to the peak particle velocity (PPV) in inches/second (FTA 2018).

### **Standards of Significance**

The proposed project would result in a significant impact if it violates the Escondido Municipal Code (City of Escondido 2018), which restricts the times of day when construction may occur (7:00 a.m. to 6:00 p.m., Monday through Friday; 9:00 a.m. to 5:00 p.m. on Saturday; and not at all on Sunday or public holidays). The City also has a maximum 1-hour average construction noise limit of 75 dB at noise-sensitive land uses unless a variance has been obtained from the City Manager in advance.

Based upon City General Plan Community Protection Element standards (City of Escondido 2012a), a significant impact would occur if project construction activities would expose vibration-sensitive uses to vibration levels that exceed 65 vibrations decibels (VdB), residences and buildings where people normally sleep to 80 VdB, or institutional land uses with primarily daytime uses to 83 VdB. The Federal Transit Administration (FTA) damage thresholds indicate that, for buildings not extremely sensitive to vibration, a damage threshold of between 0.2 inches per second (in/sec) to 0.5 in/sec would apply depending on the type of building.

As stated in the City's General Plan Community Protection Element (City of Escondido 2012a), the noise level goal for multi-family residential uses is 65 A-weighted dBA CNEL at the exterior use areas. In addition, General Plan Noise Policy 5.4 establishes an interior noise standard of 45 dBA CNEL.

A significant direct impact would occur from project-generated traffic if buildings where people normally sleep and institutional land uses with primarily daytime and evening uses are exposed to noise level increases in excess of the incremental noise standards in Figure VI-14 of the General Plan Community Protection Element (City of Escondido 2012a) (Table 1).

**Table 1**  
**Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)**

Residences and Buildings Where People Normally Sleep <sup>1</sup>		Institutional Land Uses with Primarily Daytime and Evening Uses <sup>2</sup>	
Existing L <sub>dn</sub>	Allowable Noise Increment	Existing Peak Hour L <sub>eq</sub>	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

**Source:** City of Escondido 2012a.

**Notes:** dBA = A-weighted decibel; L<sub>dn</sub> = day-night average sound level; L<sub>eq</sub> = equivalent continuous sound level

Noise levels are measured at the property line of the noise sensitive land use.

<sup>1</sup> This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

<sup>2</sup> This category includes schools, libraries, theaters, and churches where it is important to avoid interference with activities such as speech, meditation, and concentration on reading material.

## Project Construction

### *Temporary Construction Noise*

Construction would result in a temporary noise increase on and around the project site. Construction of the proposed project would take place within the hours specified in Section 17-234 of the Escondido Municipal Code. No special construction techniques (i.e., pile driving or blasting) are anticipated to be necessary for construction of the project. Noise levels from the anticipated construction activities were modeled using the Federal Highway Administration Roadway Construction Noise Model (RCNM) to estimate the worst-case project construction noise level at a distance of 50 feet from the project site. Equipment used during site preparation and grading would include an excavator, concrete saw, graders, rubber tired dozers, and tractors, loaders, or backhoes. In addition, a dump truck may be used for hauling excavated soil off site. During building construction, equipment would include welders, a generator set, a forklift, a crane, an air compressor, and a tractor, loader or backhoe. In addition, construction would involve the use of light-duty and heavy-duty trucks for worker and material delivery trips.

According to the noise modeling results, which assumes simultaneous operation of the three noisiest pieces of equipment (dozer, concrete saw, and grader), the worst-case construction noise would be approximately 86 A-weighted decibels (dBA) sound level equivalent (L<sub>eq</sub>) at a distance of 50 feet. The results of the RCNM model are included in Attachment A. Construction of the proposed project would have the potential to exceed 74 dBA up to approximately 175 feet from the project site. The proposed project is located in the commercial area of Downtown Escondido and surrounded by retail and commercial uses. There are no residences or sensitive receptors located within 175 feet of the project site. The nearest sensitive receptor to the project site is the Escondido Public Library located approximately 700 feet southeast of the project site. Therefore, construction noise levels at the nearest noise-sensitive land use would not exceed the City's maximum one-hour construction noise limit of 75 dB. Impacts during construction would be less than significant.

### Groundborne Vibration Construction Impacts

The FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) describes equipment typically used in transportation construction projects; however, the information can be used to understand possible vibration impacts from other types of construction projects as well. The FTA damage thresholds indicate that, for buildings not extremely sensitive to vibration, a damage threshold of between 0.2 inches per second to 0.5 inches per second would apply depending on the type of building. As stated previously, the nearest receptors (commercial) are located approximately 20 feet south of the project site, across the alley serving the project site. There are no known vibration-sensitive uses or institutional land uses within 100 feet of the project site.

Table 2 identifies various vibration velocity levels for typical construction equipment. Construction equipment potentially required for the proposed project are shown in bold type. As shown in Table 2, construction equipment has the potential to disturb receptors when they are in close proximity to construction activities (i.e., as close as 25 feet away).

**Table 2**  
**Vibration Source Levels for Construction Equipment**

Construction Equipment	At 25 feet		At 35 feet		At 50 feet	
	Approximate VdB	Peak Particle Velocity (in/sec)	Approximate VdB <sup>1</sup>	Peak Particle Velocity (in/sec) <sup>2</sup>	Approximate VdB <sup>1</sup>	Peak Particle Velocity (in/sec) <sup>2</sup>
Large Bulldozer	87	0.089	83	0.054	78	0.031
<b>Loaded Trucks</b>	<b>86</b>	<b>0.076</b>	<b>82</b>	<b>0.046</b>	<b>77</b>	<b>0.027</b>
<b>Jackhammer</b>	<b>79</b>	<b>0.035</b>	<b>75</b>	<b>0.021</b>	<b>70</b>	<b>0.012</b>
<b>Small Bulldozer</b>	<b>58</b>	<b>0.003</b>	<b>54</b>	<b>0.002</b>	<b>49</b>	<b>0.001</b>
Caisson Drilling	87	0.089	83	0.054	78	0.031
Roller	94	0.210	90	0.127	85	0.074
Pile Driver (impact, upper range)	112	1.518	108	0.916	103	0.537
Pile Driver (sonic, upper range)	105	0.734	101	0.443	96	0.260

**Source:** City of Escondido General Plan, Downtown Specific Plan and Climate Action Plan EIR (City 2012b).

**Notes:** Bold type indicates equipment that may be required for the proposed project.

<sup>1</sup> Based on the formula  $PPV_{equip} = PPV_{ref} \times (25/d)^{1.5}$  provided by the FTA (2006), where d is the distance from the source of vibration to the receptor.

<sup>2</sup> Based on the formula  $VdB = VdB(25\text{ feet}) - 30\log(d/25)$  provided by the FTA (2006), where d is the distance from the source of vibration to the receptor.

Equipment used during site preparation and grading would include an excavator, concrete saw, graders, small rubber tired dozers, and tractors, loaders, or backhoes. In addition, a dump truck may be used for hauling excavated soil off site. During building construction, equipment would include welders, a generator set, a forklift, a crane, an air compressor, and a tractor, loader or backhoe. In addition, construction would involve the use of light-duty and heavy-duty trucks for worker and material delivery trips. Based on the information presented in Table 2, Vibration Source Levels for Construction Equipment, vibration levels from proposed project construction activities would not have the potential to exceed the primarily daytime uses threshold of 83 VdB or 0.2 PPV at distances of more than 35 feet from construction equipment. The closest receptors to the proposed building would be the commercial and retail buildings directly south of the project site on West Grand Avenue, located as close as approximately 20 feet from the proposed building. Vibration from the proposed project would not exceed the building damage threshold, but would have the potential to result in nuisance vibration at adjacent commercial uses. The portions of the adjacent commercial uses within 35 feet of the site generally encompasses rear alley entrance areas. Only approximately 15 feet of the building area adjacent to the alley would potentially be exposed to vibration, and only when equipment is operating adjacent to the

southeast site boundary. As such, it is unlikely that vibration would interfere with daily operation at the adjacent businesses.

However, because vibration would potentially exceed the threshold for daytime uses, the construction contractor would provide construction vibration notification to minimize the potential nuisance of vibration by allowing surrounding uses time to prepare for construction activities. The construction contractor shall provide written notification to all commercial land uses within 35 feet of the property boundary at least three weeks prior to the start of construction activities informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information warning about the potential for impacts related to vibration-sensitive equipment.

**Project Operation**

***Transportation Noise Affecting the Project Site***

This analysis of operational on-site transportation noise used the traffic volumes from the Traffic Impact Analysis (LLG 2019) under the Existing Plus Project scenario and standard noise modeling equations adapted from the FHWA noise prediction model (FHWA 2008) to conservatively estimate on-site exterior noise levels from traffic. Four street segments were evaluated for Existing and Existing Plus Project noise levels, as shown in Table 3. The resulting noise levels on West Valley Parkway - North Escondido Boulevard to North Broadway are estimated to be 68 dBA CNEL, which would exceed the City standard of 65 dBA CNEL by 3 dBA CNEL with and without project traffic. The 68 dBA CNEL noise level is consistent with the City of Escondido General Plan EIR, Future 2030 Noise Contour scenario, which shows the northern portion of the project site would be within the 70 dBA CNEL contour for West Valley Parkway. The project’s contribution would be 1 dBA CNEL, and would result in a negligible increase in the existing ambient noise level without the project due to the traffic noise on South Broadway Avenue from Valley Parkway to Grand Avenue and Grand Avenue to 2<sup>nd</sup> Avenue. The existing ambient noise level is above the noise goal for multi-family residential uses identified in the City’s General Plan Community Protection Element. However, the outdoor community use area would be shielded from surrounding roadways by the proposed structure and existing commercial development along West Grand Avenue. Conservatively assuming a 5 dBA reduction in noise exposure due to the break the line of sight between the outdoor use area and surrounding roadways, exterior noise levels would be reduced to below 65 dBA (FTA 2018). Therefore, noise impacts on the proposed project’s exterior use area associated with traffic noise would be less than significant.

**Table 3  
Project Traffic Noise Levels – Existing and Existing Plus Project**

Segment	Existing Noise Level (dBA CNEL)	Existing Plus Project Noise Level (dBA CNEL)	Change in Noise Level	Allowable Increase <sup>1</sup>	Significant Impact?
West Valley Parkway - North Escondido Boulevard to North Broadway	68	68	0	+1	No
West Grand Avenue - North Escondido Boulevard to North Broadway	65	65	0	+1	No
South Broadway Avenue – Valley Parkway to Grand Avenue	64	65	+1	+1	No
South Broadway Avenue – Grand Avenue to 2 <sup>nd</sup> Avenue	60	61	+1	+2	No

**Traffic Data Source:** LLG 2019. See Attachment B for input and output.

**Note:**

<sup>1</sup> Source: Figure VI-14 of the General Plan Community Protection Element; Allowable increases vary depending on the existing ambient noise level.

Traditional architectural materials are normally able to reduce exterior to interior noise by up to 15 dBA (City of Escondido 2012a). Thus, an exterior noise level of 60 dBA would be necessary in order to reach the interior noise standard of 45 dBA CNEL. According to the Future 2030 Noise Contours in the City of Escondido General Plan EIR, portions of the project site would fall within the 65 or 70 dBA noise contours. Furthermore, as shown in Table 3, existing exterior noise levels currently exceed 60 CNEL along the West Valley Parkway project frontage. Traditional architectural materials with a noise reduction of 15 dBA would not be expected to attenuate interior noise of the proposed residential units facing West Valley Parkway to a level of 45 CNEL. To achieve the required interior noise standard (45 CNEL), once specific building plan information is available, an additional exterior-to-interior noise report shall be completed by a qualified acoustical consultant for the proposed on-site residences that face West Valley Parkway where exterior noise levels could potentially exceed 60 CNEL to demonstrate that interior levels do not exceed 45 CNEL. The information in the report shall include wall heights and lengths, room volumes, window and door tables typical for a building plan, as well as information on any other openings in the building shell. The report shall also assume a “windows-closed” condition and that vehicles on West Valley Parkway are traveling at 35 mph. With this specific building plan information, the report shall determine the predicted interior noise levels at the planned on-site buildings. If predicted noise levels are found to be in excess of 45 CNEL, the report shall identify architectural materials or techniques that could be included to reduce noise levels to 45 CNEL in habitable rooms. Standard measures such as glazing with Sound Transmission Class (STC) ratings from a STC 22 to STC 60, as well as walls with appropriate STC ratings (34 to 60), should be considered. The report shall be submitted and approved by the City prior to the issuance of a building permit. Appropriate means of air circulation and provision of fresh air would be provided to allow windows to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system would meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

### **Off-Site Transportation Noise**

A comparison of existing noise levels with and without the proposed project are provided in Table 3. A comparison of future noise levels with cumulative development, with and without the proposed project, are provided in Table 4. The proposed project would not result in an increase in ambient noise level along either study area segment under Existing Plus Project or Existing Plus Cumulative Plus Project conditions. Therefore, impacts from off-site transportation noise would be less than significant.

**Table 4  
Project Traffic Noise Levels – Existing + Cumulative With and Without Project**

Segment	Existing Plus Cumulative Noise Level (dBA CNEL)	Existing Plus Cumulative Plus Project Noise Level (dBA CNEL)	Change in Noise Level	Allowable Increase <sup>1</sup>	Significant Impact?
West Valley Parkway - North Escondido Boulevard to North Broadway	68	68	0	+1	No
West Grand Avenue - North Escondido Boulevard to North Broadway	65	65	0	+1	No
South Broadway Avenue – Valley Parkway to Grand Avenue	65	65	0	+1	No
South Broadway Avenue – Grand Avenue to 2 <sup>nd</sup> Avenue	61	61	0	+2	No

**Traffic Data Source:** LLG 2019. See Attachment B for input and output.

**Note:**

<sup>1</sup> Source: Figure VI-14 of the General Plan Community Protection Element; Allowable increases vary depending on the existing ambient noise level.

### ***On-Site Heating, Ventilation, and Air Conditioning Systems***

Stationary operational noise sources are regulated by the limits within City Municipal Code Section 17-229, which states that noise in commercial zones shall not exceed 60 dBA LEQ from 7:00 AM to 10:00 PM or 55 dBA LEQ from 10:00 PM to 7:00 AM. The HVAC units for the proposed project would be installed in four clusters with 24 to 35 units in each cluster, for approximately 131 units. Clusters would be set back from the edge of the rooftop by 20 feet or more at all locations. The specifications and locations of the HVAC systems that would be installed on the project rooftop are unknown at this time. Therefore, the specifications for the HVAC systems of a similar multi-family residential project are assumed (ABC Acoustics 2018). Individual HVAC units not installed within an enclosure would have the potential to generate a noise level of up to 79 dBA LEQ at the unit (approximately 3 feet). Combined noise levels from multiple units would be higher at the source. Combined noise level from 35 units simultaneously operating at 79 dBA LEQ would be approximately 94 dBA at 3 feet. This estimate is conservative because it assumes that an equal distance from all units, and simultaneous operation. The closest receptors to the proposed building would be the commercial and retail buildings directly south of the project site on West Grand Avenue, located as close as approximately 20 feet from the proposed building. With an additional 20 foot rooftop setback, unenclosed HVAC units would generate a noise level of approximately 72 dBA LEQ at the nearest commercial building.

The proposed residential building would be six stories tall. The surrounding commercial and residential uses are two stories tall. This difference in height would likely break the line of sight between the HVAC units and receptors, so that the project itself would provide an approximately 5 dBA reduction in HVAC noise exposure (FTA 2006). Noise levels at the nearest commercial uses would be approximately 67 dBA without installation of noise-reducing features. However, as a project feature, the HVAC units on the project rooftop would be installed within enclosures such that noise from HVAC operation does not exceed 55 dBA at the nearest off-site receptor. Although the exact specifications of the project HVAC units and selected enclosures are unknown at this time, enclosures providing at least a 12 dBA noise reduction would be required. Installation of HVAC units inside enclosures providing at least a 12 dBA noise reduction would reduce noise levels at the nearest commercial uses to 55 dBA or below<sup>1</sup>. Therefore, this impact would be less than significant.

### ***Recycling and Trash Collection Noise***

The project proposes a central trash collection room located adjacent to the parking garage. The enclosure would be accessed from the alley on the southern boundary of the project site. Trash service would be provided by Escondido Disposal. The schedule for waste collection has not yet been established; however, trash collection is anticipated to be required several times per week for solid waste and recyclable materials. The existing commercial uses surrounding the project site currently require waste disposal services. The existing commercial uses currently use dumpsters and have disposal requirements similar to what would be required for the proposed project. The dumpsters for adjacent commercial uses are also located in the alley that would be accessed for project waste pickup. Section 17-232 of the City's Noise Ordinance limits trash collection to the hours between 6:00 a.m. and 10:00 p.m. However, as a project feature, trash collection at the project site would be limited to between 8:00 a.m. and 5:00 p.m., Monday through Friday. Given the short duration and relative infrequency of individual collection events, and scheduling collection during prime activity hours, and the existing service of the adjacent alley, the addition of one additional waste collection customer in the project

<sup>1</sup> The specifications of the HVAC enclosures are unknown at this time; however, a 12 dBA reduction is well within achievable noise reductions advertised by commercial HVAC enclosure providers. For example, the NOISEBLOCK™ enclosure system developed by Kinetic Noise Control offers typical noise reductions of 20-35 dBA. Source: Kinetics Noise Control. NOISEBLOCK™ Modular Panel Enclosure Systems brochure. February 2016. Available online: [http://kineticsnoise.com/downloads/brochures/NOISEBLOCK\\_Acoustic\\_Enclosures.pdf](http://kineticsnoise.com/downloads/brochures/NOISEBLOCK_Acoustic_Enclosures.pdf)

area would have little impact on the operation of surrounding land uses and would not be noticeably different than existing conditions. This impact would be less than significant

### ***Landscape Equipment and Nuisance Noise***

Noise from residential land use is typically limited to nuisance noise, such as yelling or loud music. Additionally, the proposed project would provide an outdoor open space area on the second floor that would increase human activity in the project area and be a potential source of nuisance noise. This area would include a community pool and spa, lounge and gas fire pits, artificial turf area, bar with gas fire pit feature, barbeque grills, and pool furniture. The common area would primarily provide gathering areas and noise would generally be limited to typical conversation levels that would not be audible at surrounding properties, with the exception of the pool. The pool would potentially result in louder conversational noise levels from more active use, such as children playing. As a project feature, lease agreements would include rules related to nuisance noise, including music, at the pool to future limit noise exposure.

General residential noise sources such as landscape equipment and other intermittent or neighborhood noise such as yelling, amplified music, or barking dogs (often characterized as nuisance noise) are regulated by the limits within the Escondido Municipal Code Sections 17-237 and 17-240 of the noise ordinance. Nuisance noise is difficult to control due to the variety of noise sources and intermittent nature of the impact. Additionally, the project site is located in a developed urban area that currently experiences ambient traffic noise and nuisance noise. It is unlikely that intermittent audible residential noise would be a significant different or excessive compared to existing conditions. Intermittent landscaping of the Proposed Project would be similar to the existing landscaping requirements for surrounding commercial properties. Compliance with the City's noise ordinance would limit exposure to nuisance noise. Therefore, impacts would be less than significant.

### ***Groundborne Vibration Operational Impacts***

Residential land uses are typically not associated with substantial amounts of groundborne vibration, as they do not involve the use of heavy-duty off-road equipment. Furthermore, the project site is not located within close proximity to a rail line or other source of substantial groundborne vibration. Therefore, impacts would be less than significant.

### **Summary**

Implementation of the proposed Aspire project would not result in significant noise impacts associated with the construction and operation of the project. Therefore, no mitigation measures are necessary.

If you have any questions regarding this analysis, please do not hesitate to call at 619.481.5002 or e-mail at [sharon.toland@weareharris.com](mailto:sharon.toland@weareharris.com).

Sincerely,



Sharon Toland  
Project Manager  
**Harris & Associates**

### **References**

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**Attachment A**  
**Roadway Construction Noise Model (RCNM) Results**

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Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 4/23/2018  
 Case Description: Touchstone Aspire Project

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Generic Receptor -Building Const/Coating	Residential		60	45

Description	Device	Impact Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Generator	No	50	80.6	50	0	
Crane	No	16	80.6	50	0	
All Other Equipment > 5 HP	No	50	85	50	0	
Tractor	No	40	84	50	0	
Welder / Torch	No	40	74	50	0	
Welder / Torch	No	40	74	50	0	
Welder / Torch	No	40	74	50	0	

Results

Equipment	Calculated (dBA)	Day		Noise Limits (dBA)			Noise Limit Exceedance (dBA)							
		Leq	Lmax	Leq	Evening		Night		Day		Leq	Lmax	Leq	Lmax
					Lmax	Leq	Lmax	Leq	Lmax	Leq				
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	85	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84	80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total</b>	<b>85</b>	<b>85.9</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

\*Calculated Lmax is the Loudest value.

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**Attachment B**  
**Federal Highway Authority Highway Traffic Noise Prediction Model Results**

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