Appendix I: Acoustical Assessment

Acoustical Assessment
KPC Coachella Specific Plan
City of Coachella, California

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March 2025

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LIST OF ABBREVIATED TERMS

ADT	average daily traffic
dBA	A-weighted sound level
CEQA	California Environmental Quality Act
CNEL	community equivalent noise level
L_{dn}	day-night noise level
dB	decibel
L_{eq}	equivalent noise level
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	heating ventilation and air conditioning
Hz	hertz
in/sec	inches per second
L_{max}	maximum noise level
µPa	micropascals
L_{min}	minimum noise level
PPV	peak particle velocity
RCNM	Roadway Construction Noise Model
RMS	root mean square
SEL	Sound Exposure Level
VdB	vibration velocity decibels

1 INTRODUCTION

This report documents the results of an Acoustical Assessment completed for the KPC Coachella Specific Plan project (Project). The purpose of this Acoustical Assessment is to evaluate the potential construction and operational noise and vibration levels associated with the Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The Project site is approximately three miles east of the City of Coachella (City) center in the foothills of the Little San Bernardino Mountains, with views across the Coachella Valley to the San Jacinto and Santa Rosa Mountains. The Project site is bounded by the Little San Bernardino Mountains to the north, the City of Indio to the northwest, Interstate 10 (I-10) and the City of Coachella to the south and west, and unincorporated Riverside County to the east; see Exhibit 1: Regional Vicinity Map and Exhibit 2: Site Vicinity Map.

1.2 Project Description

The Project site is approximately 2,807 (conceptual)[1] acres on an undisturbed, open, hilly, and undeveloped desert area with minimal vegetation, except for small native trees, shrubs, and annual grassland.

The KPC Coachella Specific Plan is a new master planned community located at the eastern entrance to the City. This 2,807-acre (conceptual) Project would provide a mixture of land uses intended to create a vibrant, cohesive entrance to the City, with five villages (A through E) and neighborhoods that are unique, yet compatible with, surrounding existing and planned neighboring areas. The Project would provide new additional commercial, residential, educational, employment, and recreational opportunities for residents and visitors within the City. A proposed major hotel and performing arts amphitheater is anticipated to be a regional attractor, attracting local and regional visitors.

The KPC Coachella Specific Plan proposes the following main land uses, see Exhibit 3: Conceptual Site Plan and Exhibit 4: Phasing Plan:

- A mixture of residential product types, including an active adult/senior-oriented village, totaling approximately 9,536 dwelling units;
- Approximately 305 acres of commercial areas, which include mixed-use, entertainment center and performing arts theater, entertainment venue, and hotel rooms;
- A college/university overlay to allow for institutions of higher learning with an emphasis on healthcare;
- Approximately 71 acres of school uses (3 elementary schools and 1 middle school);
- Approximately 395 acres of parks, greenways, and amenity centers;
- Approximately 179 acres of circulation uses, including arterials, major, and secondary roadways;
- Approximately 68 acres of Agricultural Production areas;
- Approximately 754 acres of natural open space, including drainage channels and trails;

1 Approximately 91 acres in the central portion of the Project area are owned by others and are designated as "Not a Part" on the land use plan for the Project.

- A potential multi-story high-rise building; and
- Approximately 91 'not a part' acres[2]

The Project proposes two connection points to the existing roadways within the City. The main entry into the Project would be via the Avenue 50 and Interstate 10 interchange directly to the south. Additionally, the extension of Vista Del Norte from the west would provide access to Dillon Road and the rest of the City. Table 1: Proposed Land Uses shows the summary of the proposed land uses and attributed areas.

Table 1: Proposed Land Uses

Land Use	Quantity	Units	Planning Area
Phase 1			
Multi-family Mid-Rise	106	DU	B-1
Shopping Center	175	TSF	
General Office	58	TSF	
Hotel	375	Rooms	B-2
General Office	100	TSF	
Multi-family Mid-Rise	96	DU	B-3
Shopping Center	160	TSF	
General Office	53	TSF	
Multi-family Mid-Rise	102	DU	B-4
Shopping Center	168	TSF	
General Office	56	TSF	
Multi-family Mid-Rise	45	DU	B-7
Shopping Center	74	TSF	
General Office	25	TSF	
Park	52	Acre	OS-6
Park	38	Acre	OS-7
Phase 2			
Single Family	29	DU	A-6
Single Family	500	DU	A-7
Multi-family Low-Rise	230	DU	A-8
School	275	Students	A-9
Multi-family Low-Rise	242	DU	A-10
Multi-family Mid-Rise	419	DU	A-11
Theater	5	Acre	C-1
Park	9	Acre	OS-5
Phase 3			
Single Family	160	DU	A-1
Single Family	49	DU	A-2
School	141	Student	A-3
Single Family	122	DU	A-4
Multi-family Low-Rise	510	DU	A-5
Park	34	Acre	OS-1
Park	26	Acre	OS-2
Park	15	Acre	OS-3
Park	14	Acre	OS-4
Phase 4			

2 Approximately 91 acres in the central portion of the Project area are owned by others and are designated as "Not a Part" on the land use plan for the Project.

Table 1: Proposed Land Uses			
Land Use	**Quantity**	**Units**	**Planning Area**
Multi-family Mid-Rise	236	DU	B-5
Shopping Center	391	TSF	
General Office	130	TSF	
Multi-family Mid-Rise	222	DU	B-6
Shopping Center	368	TSF	
General Office	123	TSF	
Multi-family Mid-Rise	1,265	DU	B-8
Multi-family Mid-Rise	309	DU	B-9
Park	19	Acre	OS-8
Park	14	Acre	OS-9
Park	5	Acre	OS-10
Phase 5			
Multi-family Low-Rise	321	DU	C-2
Single Family	112	DU	C-3
Multi-family Mid-Rise	17	DU	C-4
Shopping Center	28	TSF	
General Office	9	TSF	
Multi-family Low-Rise	78	DU	C-5
School	1,544	Student	C-6
Multi-family Low-Rise	500	DU	C-7
Single Family	235	DU	D-1
Condo	544	DU	D-2
Condo	362	DU	D-3
Multi-family Low-Rise	432	DU	D-4
Condo	550	DU	D-5
Single Family	253	DU	D-6
Single Family	247	DU	D-7
Multi-family Mid-Rise	21	DU	D-8
Shopping Center	35	TSF	
General Office	12	TSF	
Park	52	Acre	OS-11
Park	11	Acre	OS-12
Park	35	Acre	OS-13
Park	42	Acre	OS-14
Park	15	Acre	OS-15
Phase 6			
Multi-family Low-Rise	312	DU	E-1
Single Family	195	DU	E-2
School	871	Students	E-3
Single Family	35	DU	E-4
Single Family	22	DU	E-5
Multi-family Low-Rise	402	DU	E-6
Single Family	190	DU	E-7
Park	43	Acre	OS-16
Park	26	Acre	OS-17
Park	17	Acre	OS-18

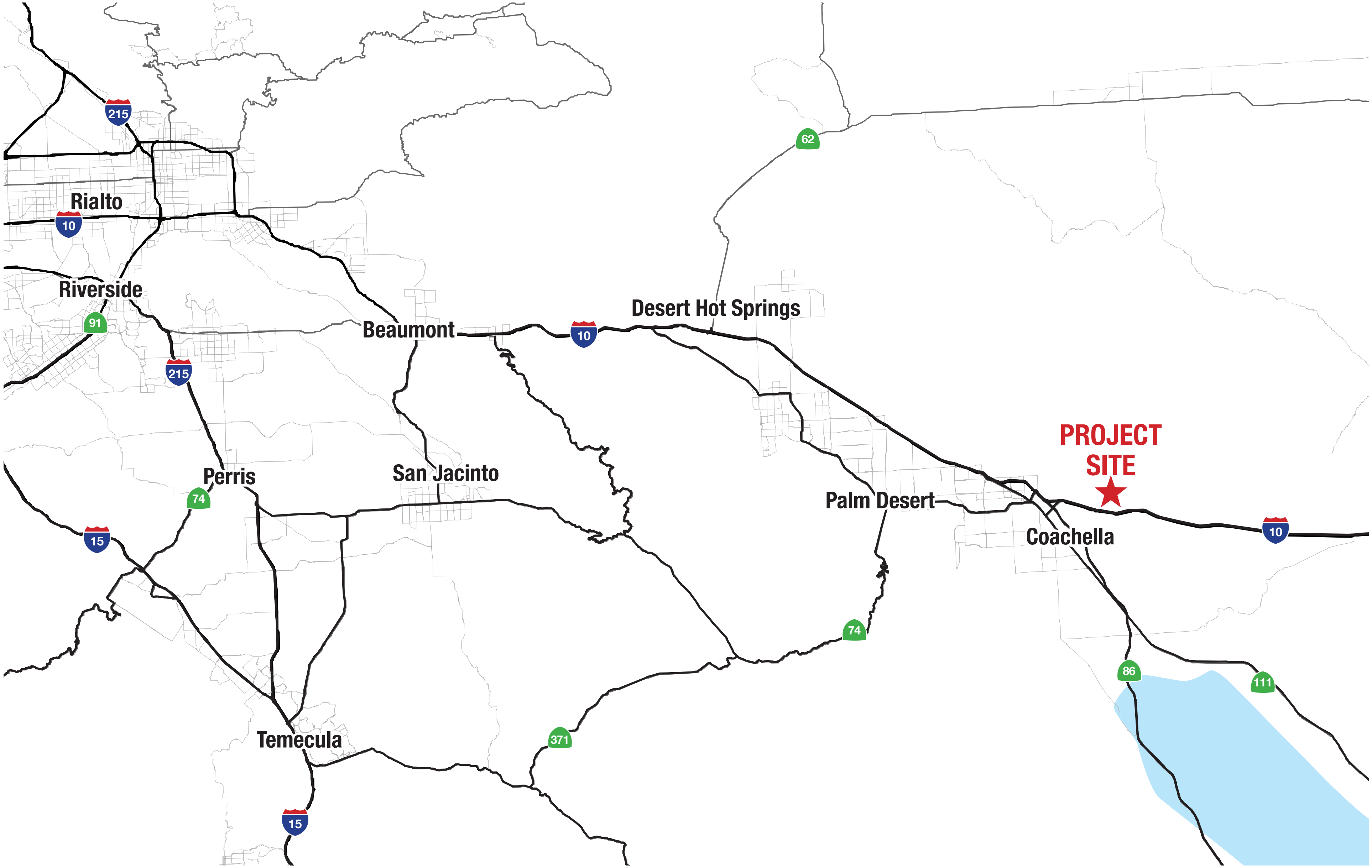

EXHIBIT 1: Regional Vicinity Map
KPC Coachella Specific Plan

Not to Scale

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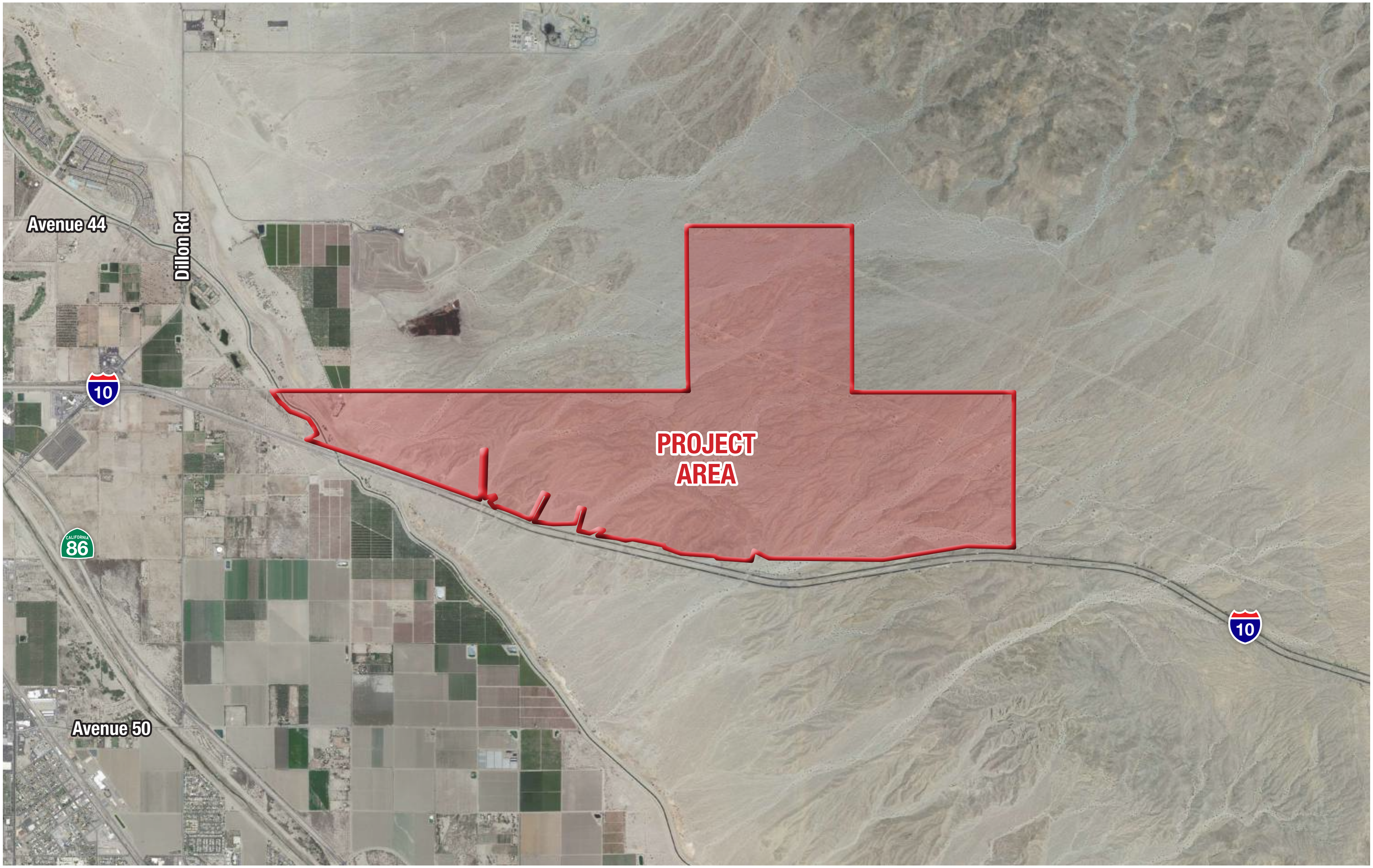

EXHIBIT 2: Site Vicinity Map
KPC Coachella Specific Plan

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EXHIBIT 3: Conceptual Site Plan

KPC Coachella Specific Plan

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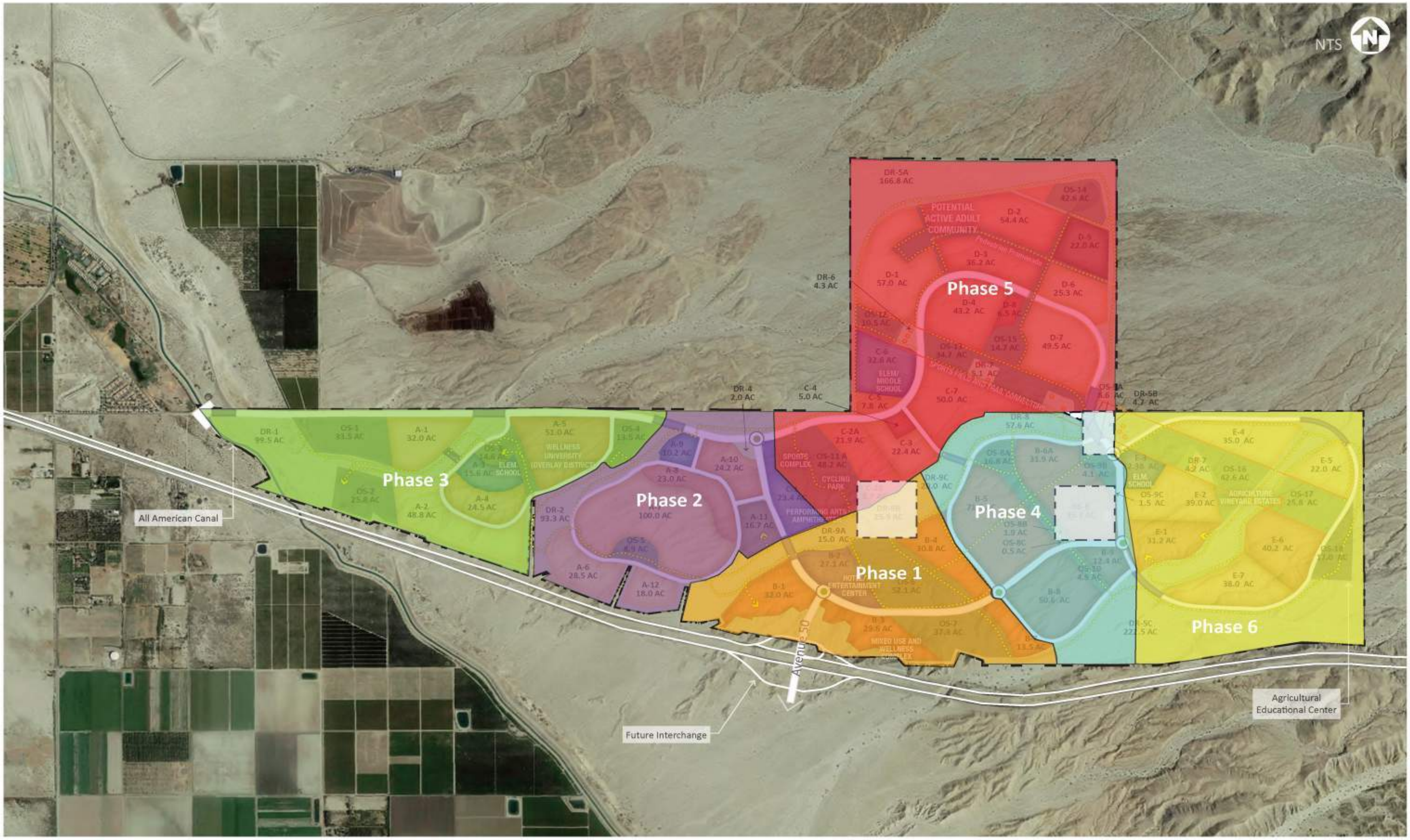

EXHIBIT 4: Phasing Plan

KPC Coachella Specific Plan

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2 ACOUSTIC FUNDAMENTALS

2.1 Sound and Environmental Noise

Acoustics is the science of sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium (e.g., air) to human (or animal) ear. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or hertz (Hz).

Noise is defined as loud, unexpected, or annoying sound. The fundamental acoustics model consists of a noise source, a receptor, and the propagation path between the two. The loudness of the noise source, obstructions, or atmospheric factors affecting the propagation path, determine the perceived sound level and noise characteristics at the receptor. Acoustics deal primarily with the propagation and control of sound. A typical noise environment consists of a base of steady background noise that is the sum of many distant and indistinguishable noise sources. The sound from individual local sources is superimposed on this background noise. These sources can vary from an occasional aircraft or train passing by to continuous noise from traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a large range of numbers. To avoid this, the decibel (dB) scale was devised. The dB scale uses the hearing threshold of 20 micropascals (μPa) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness. Table 2: Typical Noise Levels provides typical noise levels.

Table 2: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	– 110 –	Rock Band
Jet fly-over at 1,000 feet		
	– 100 –	
Gas lawnmower at 3 feet		
	– 90 –	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	– 80 –	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	**– 70 –**	Vacuum cleaner at 10 feet
Commercial area		Normal Speech at 3 feet
Heavy traffic at 300 feet	**– 60 –**	
		Large business office
Quiet urban daytime	**– 50 –**	Dishwasher in next room
Quiet urban nighttime	**– 40 –**	Theater, large conference room (background)
Quiet suburban nighttime		
	– 30 –	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	– 20 –	
		Broadcast/recording studio
	– 10 –	
Lowest threshold of human hearing	**– 0 –**	Lowest threshold of human hearing

Source: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

Noise Descriptors

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Most commonly, environmental sounds are described in terms of equivalent noise level (L_{eq}) that has the same acoustical energy as the summation of all the time-varying events. While L_{eq} represents the continuous sound pressure level over the measurement period, the day-night noise level (L_{dn}) and Community Equivalent Noise Level (CNEL) are measures of energy average during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. Each is applicable to this analysis and defined in Table 3: Definitions of Acoustical Terms.

Table 3: Definitions of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in μPa (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in dB as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 μPa). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in dB as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Maximum Noise Level (L_{max}) Minimum Noise Level (L_{min})	The maximum and minimum dBA during the measurement period.
Exceeded Noise Levels (L_{01}, L_{10}, L_{50}, L_{90})	The dBA values that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day-Night Noise Level (L_{dn})	A 24-hour average L_{eq} with a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity at nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level (CNEL)	A 24-hour average L_{eq} with a 5 dBA weighting during the hours of 7:00 a.m. to 10:00 a.m. and a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Because sound levels can vary markedly over a short period of time, a method for describing either the sound's average character (L_{eq}) or the variations' statistical behavior (L_{XX}) must be utilized. The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The predicted models' accuracy depends on various factors, such as the distance between the noise receptor and the noise source, the character of the ground surface (e.g., hard or soft), and the presence or absence of structures (e.g., walls or buildings) or topography, and how well model inputs reflect these conditions.

A-Weighted Decibels

The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by dBA values. There is a strong correlation between dBA and the way the human ear perceives sound. For this reason, the dBA has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of dBA, but are expressed as dB, unless otherwise noted.

Addition of Decibels

The dB scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10.[3] When the standard logarithmic dB is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound.[4] When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.[5] Under the dB scale, three sources of equal loudness together would produce an increase of approximately 5 dBA.

Sound Propagation and Attenuation

Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics.[6] No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed in this report.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the noise receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm can reduce noise levels by 5 to 15 dBA.[7] The way older homes in California were constructed generally

3 California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.
4 Ibid.
5 Ibid.
6 Ibid.
7 Federal Highway Administration, *Highway Traffic and Construction Noise - Problem and Response*, April 2006.

provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA.[8] Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted[9]:

- Except in carefully controlled laboratory experiments, a 1-dBA change cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A minimum 5-dBA change is required before any noticeable change in community response would be expected. A 5-dBA increase is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss. While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.[10]

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8 Compiled from James P. Cowan, *Handbook of Environmental Acoustics,* 1994 and Cyril M. Harris, Handbook of Noise Control, 1979.

9 Compiled from California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, and FHWA, *Noise Fundamentals,* 2017.

10 U.S. Department of Labor, *Occupational Safety and Health Standards*, *29 CFR 1910* (Occupational Noise Exposure).

Annoyance. Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

2.2 Groundborne Vibration

Sources of groundborne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions or heavy equipment use during construction). Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave and is expressed in terms of inches-per- second (in/sec). The RMS velocity is defined as the average of the squared amplitude of the signal and is expressed in terms of velocity decibels (VdB). The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table 4: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations**,** displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the individual's sensitivity. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

Table 4: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations

Maximum PPV (in/sec)	Vibration Annoyance Potential Criteria	Vibration Damage Potential Threshold Criteria	FTA Vibration Damage Criteria
0.008	--	Extremely fragile historic buildings, ruins, ancient monuments	--
0.01	Barely Perceptible	--	--
0.04	Distinctly Perceptible	--	--
0.1	Strongly Perceptible	Fragile buildings	--
0.12	--	--	Buildings extremely susceptible to vibration damage
0.2	--	--	Non-engineered timber and masonry buildings
0.25	--	Historic and some old buildings	--
0.3	--	Older residential structures	Engineered concrete and masonry (no plaster)
0.4	Severe	--	--
0.5	--	New residential structures, Modern industrial/commercial buildings	Reinforced-concrete, steel or timber (no plaster)

PPV = peak particle velocity; in/sec = inches per second; FTA = Federal Transit Administration

Source: California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, 2020 and Federal Transit administration, Transit Noise and Vibration Assessment Manual, 2018.

3 REGULATORY SETTING

To limit population exposure to physically or psychologically damaging as well as intrusive noise levels, the Federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

3.1 State of California

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of "normally acceptable", "conditionally acceptable", "normally unacceptable", and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 CNEL and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Title 24 – Building Code

The State's noise insulation standards are codified in the California Code of Regulations, Title 24: Part 1, Building Standards Administrative Code, and Part 2, California Building Code. These noise standards are applied to new construction in California for interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, hotel rooms, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new multi-family residential buildings and habitable rooms (including hotels), the acceptable interior noise limit for new construction is 45 dBA CNEL.

3.2 Local

City of Coachella General Plan

The City of Coachella General Plan contains the following goals and policies that address noise:

<u>Chapter 4 – Land Use and Community Character</u>

Goal 5. Neighborhoods. Neighborhoods that provide a variety of housing types, densities, designs and mix of uses and services that reflect the diversity and identity of Coachella, provide for diverse needs of residents of all ages, ethnicities, socio-economic groups and abilities, and support healthy and active lifestyles.

Policy 5.20: **Soundwalls**. Allow the use of soundwalls to buffer new Neighborhoods from existing sources of noise pollution such as railroads and limited access roadways. Prohibit the use of soundwalls to buffer residential areas from arterial or collector streets. Instead design approaches such as building setbacks, landscaping and other techniques shall be used.

Chapter 10 – Noise

As Coachella continues to grow, traffic levels and traffic-related noise is expected to increase. Table 5: Coachella Land Use/Noise Compatibility Matrix shows the City's Land Use/Noise Compatibility Matrix to identify which land uses are satisfactory within different noise environments. Green indicates an acceptable noise level within which a use could be located. Red indicates an unacceptable noise level within which a use could be located. The City's Interior and Exterior Noise Standards, shown in Table 6: Coachella Interior and Exterior Noise Standards, defines the maximum acceptable exterior and interior noise levels that should be achieved after placement of the land use.

Table 5: Coachella Land Use/Noise Compatibility Matrix

Land Use Categories		CNEL						
Categories	**Uses**	**55**	**60**	**65**	**70**	**75**	**80**	
Residential	Single Family, Duplex, Multiple Family	Green	Green	Yellow	Yellow	Orange	Red	Red
Residential	Mobile Homes	Green	Green	Yellow	Orange	Orange	Red	Red
Commercial – Regional, District	Hotel, Motel, Transient Lodging	Green	Green	Yellow	Yellow	Orange	Orange	Red
Commercial – Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	Green	Green	Green	Green	Yellow	Yellow	Orange
Commercial Industrial	Office Building, Research and Development, Professional Offices, City Office Building	Green	Green	Green	Yellow	Yellow	Orange	Red
Commercial – Recreation Institutional – Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	Yellow	Yellow	Orange	Orange	Red	Red	Red
Commercial – Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	Green	Green	Green	Yellow	Yellow	Red	Red
Commercial – General, Special Industrial, Institutional	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	Green	Green	Green	Green	Yellow	Yellow	Yellow
Institutional – General	Hospital, Church, Library, School Classroom	Green	Green	Yellow	Orange	Orange	Red	Red
Open Space	Parks	Green	Green	Green	Yellow	Orange	Red	Red
Open Space	Golf Couse, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	Green	Green	Green	Green	Yellow	Orange	Orange
Agricultural	Agriculture	Green	Green	Green	Green	Green	Green	Green

ZONE A (GREEN) CLEARLY COMPATIBLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.
ZONE B (YELLOW) NORMALLY COMPATIBLE: New construction or development should be undertaken only after an analysis of the noise reduction requirements is made and needed noise insulation features included in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning will normally suffice.
ZONE C (ORANGE) NORMALLY INCOMPATIBLE: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
ZONE D (RED) CLEARLY INCOMPATIBLE: New construction or development should generally not be undertaken.
* Construction of new residential uses will not be allowed within the 65 dBA CNEL contour for airport noise.

Source: City of Coachella, *General Plan Update Final EIR*, Figure 10-5, October 2014.

Table 6: Coachella Interior and Exterior Noise Standards

Land Use Categories		Average CNEL (DB)	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single Family, Duplex, Multiple Family	45[3]	65
	Mobile Homes	-	65[4]
Commercial Industrial Institutional	Hotel, Motel, Transient Lodging	45	65[5]
	Commercial Retail, Bank, Restaurant	55	-
	Office Building, Research and Development, Professional Offices, City Office Building	50	-
	Amphitheater, Concert Hall, Meeting Hall	45	-
	Gymnasium (Multipurpose)	50	-
	Sports Club	55	-
	Manufacturing, Warehousing, Wholesale, Utilities	65	-
	Movie Theaters	45	-
Institutional	Hospitals, Schools Classroom	45	65
	Church, Library	45	-
Open Space	Parks	-	65

1. Indoor environment excluding: bathrooms, toilets, closets, corridors.
2. Outdoor environment limited to:
   * Private Yard of Single-Family Residence
   * Multi-Purpose Private Patio or Balcony which is served by means of exit from inside
   * Mobile Home Park
   * Hospital Patio
   * Park Picnic Area
   * School Playground
   * Hotel and Motel Recreation Area
3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of the Uniform Building Code.
4. Exterior noise level should be such that interior noise level will not exceed 45 CNEL
5. Except those areas affected by aircraft noise.

Source: City of Coachella, *General Plan Update Final EIR*, Table 4.10-3, October 2014.

Goal 1. Land Use Planning and Design. A community where noise compatibility between differing types of land uses is ensured through land use planning and design strategies.

Policies:

1.1 **Noise Compatibility**. Use the City's Land Use/Noise Compatibility Matrix (Table 5) as a guide for planning and development decisions.

1.2 **Noise Analysis and Mitigation**. Require projects involving new development or modifications to existing development to implement mitigation measures, where necessary, to reduce noise levels to at least the normally compatible range shown in the City's Land Use/Noise Compatibility Matrix in Figure 10-1. Mitigation measures should focus on architectural features, building design and construction, rather than site design features such as excessive setbacks, berms and sound walls, to maintain compatibility with adjacent and surrounding uses.

1.3 **Mixed Use**. Require mixed-use structures and areas be designed to prevent transfer of noise from commercial uses to residential uses and ensure a 45 dBA CNEL level or lower for all interior living spaces.

1.4 **County and Regional Plans**. Periodically review county and regional plans for transportation facilities and airport operation, to identify and mitigate the potential impact of noise on future development.

1.5 **Airport Land Use Planning**. Comply with all applicable policies contained in the Riverside County General Plan Noise Element relating to airport noise, including those policies requiring compliance with the airport land use noise compatibility criteria contained in the airport land use compatibility plan for Jacqueline Cochran Regional Airport; and those policies prohibiting new residential land uses, except construction of single-family dwellings on legal residential lots of record, within the 60 dB CNEL contour of this airport.

1.6 **Land Use and Community Design**. Except in cases where noise levels are in the clearly incompatible range as shown in the City's Land Use/Noise Compatibility Matrix shown in Figure 10-1, prioritize the building design and character policies in the Land Use and Community Design Element over those in the Noise Element to ensure that new development meets the design vision of the City.

Goal 2. Stationary Source Noise. A community where excessive noise from stationary sources is minimized.

Policies:

2.1 **Noise Ordinanc**e. Minimize noise conflicts between neighboring properties through enforcement of applicable regulations such as the City's noise ordinance.

2.2 **Noise Control**. Minimize stationary noise impacts on sensitive receptors and noise emanating from construction activities, private developments/residences, landscaping activities, night clubs and bars and special events.

2.3 **Entertainment Uses**. Require entertainment, restaurants, and bars engage in responsible management and operation to control activities of their patrons on-site, within reasonable and legally justifiable proximity to minimize noise impacts on adjacent residences and other noise-sensitive receptors, require mitigation, as needed, for development of entertainment uses near noise-sensitive receptors.

2.4 **Industrial Uses**. Require industrial uses engage in responsible operational practices that minimize noise impacts on adjacent residences and other noise-sensitive receptors require mitigation as needed for development of industrial uses near noise sensitive receptors.

Goal 3. Mobile Source Noise. A community where excessive noise from mobile sources is minimized.

Policies:

3.1 **Roadway Noise**. Where roadway noise exceeds the normally compatible range shown in the City's Land Use/Noise Compatibility Matrix shown in Figure 10-1, implement policies listed under Goal 1 to reduce the impacts of roadway noise on noise-sensitive receptors.

3.2 **Traffic Calming**. Where roadway noise exceeds the normally compatible range shown in the City's Land Use/Noise Compatibility Matrix shown in Figure 10-1, consider the implementation of traffic calming measures such as reduced speed limits or roadway design features to reduce noise levels through reduced vehicle speeds and/or diversion of vehicle traffic.

3.3 **Railway Noise**. Ensure noise from rail lines is taken into account during the land use planning and site development processes.

City of Coachella Municipal Code

The Coachella Municipal Code establishes the following noise provisions relative to the Project:

Section 7.04.030 – Sound level limits as related to fixed noise sources:

The following ten-minute average sound level limits shown in Table 7: Coachella Noise Standards, unless otherwise specifically indicated, shall apply as indicated in the following table as it relates to a fixed noise source or leaf blowers.

Table 7: Coachella Noise Standards

Zone	Time	Applicable Ten-Minute Average Decibel Limit (A-weighted)
Residential – All zones	6:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 6:00 a.m.	45
Commercial – All zones	6:00 a.m. to 10:00 p.m.	65
	10:00 p.m. to 6:00 a.m.	55

Source: City of Coachella Municipal Code Section 7.04.030, June 2, 2022.

Section 7.04.070 - Construction activities exemptions:

No person shall perform, nor shall any person be employed, nor shall any person cause any other person to be employed to work for which a building permit is required by the city in any work of construction, erection, demolition, alteration, repair, addition to or improvement of any building, structure, road or improvement to realty except between the hours as set forth as follows:

October 1st through April 30th:

Monday—Friday: 6:00 a.m. to 5:30 p.m.
Saturday: 8:00 a.m. to 5:00 p.m.
Sunday: 8:00 a.m. to 5:00 p.m.
Holidays: 8:00 a.m. to 5:00 p.m.

May 1st through September 30th:

Monday—Friday: 5:00 a.m. to 7:00 p.m.
Saturday: 8:00 a.m. to 5:00 p.m.
Sunday: 8:00 a.m. to 5:00 p.m.
Holidays: 8:00 a.m. to 5:00 p.m.

Section 7.04.075 - Property maintenance activities exemptions:

A. Noise sources associated with property maintenance activity and all portable blowers, lawnmowers, edgers or similar devices shall be prohibited except during the following hours:

<u>October 1st through April 30th:</u>

Monday—Sunday: 9:00 a.m. to 5:30 p.m.
Holidays: Not allowed.

<u>May 1st through September 30th:</u>

Monday—Friday: 8:00 a.m. to 5:30 p.m.
Saturday and Sunday: 9:00 a.m. to 5:30 p.m.
Holidays: Not allowed.

Notwithstanding the hours of permitted operations, such equipment that constitutes a public nuisance may be abated as otherwise provided in this Code.

B. No person shall willfully make or continue, or willfully cause to be made or continued, any noise from any portable powered blower at a level which exceeds seventy (70) decibels dBA measured at the midpoint of a wall area twenty (20) feet long and ten (10) feet high and at the horizontal distance fifty (50) feet away from the midpoint of the wall, or not more than seventy-six (76) decibels dBA at a horizontal distance of twenty-four (24) feet using a sound level meter.

C. No portable powered blower shall be operated in a manner which will permit dirt, dust, debris, leaves, grass clippings, cuttings, or trimmings from trees or shrubs to be blown or deposited onto neighboring property or public right-of-way. All waste shall be removed and disposed of in a sanitary manner by the use or property occupant.

D. Leaf blowers shall not be operated within a horizontal distance of ten (10) feet of any operable window, door, or mechanical air intake opening or duct.

4 EXISTING CONDITIONS

4.1 Existing Noise Sources

The City of Coachella is characterized as a predominately urban environment. Much of the City has been developed with residential, commercial, and industrial land uses. Transportation related noise is the primary noise source in the City. Other noise sources include noise generated from commercial, industrial, residential, institutional, and recreational activities.

Mobile Sources

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes from the Project traffic analysis (prepared by Linscott Law & Greenspan Engineers, 2023). The noise prediction model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (also referred to as energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data indicates that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along roadway segments proximate to the project site are included in Table 8: Existing Traffic Noise Levels.

Table 8: Existing Traffic Noise Levels

Roadway	Segment	ADT	dBA CNEL[1]
Dillon Road	I-10 WB Ramps to Vista Del Norte	8,060	63.0
Vista Del Norte	Dillon Road to Tyler Street	670	46.5
	East of Tyler Street	670	46.5
Avenue 50	Leoco Lane to Magnolia Street/Tyler Street	7,960	60.7
	Magnolia Street/Tyler Street to SR-86	7,390	60.3
	Tyler Street to Polk Street	500	50.6
	Polk Street to Fillmore Street	140	45.1
	Fillmore Street to I-10 EB Ramps	--	N/A
Polk Street	Avenue 50 to Avenue 52	290	45.0
Avenue 52	Van Buren Street to Cesar Chavez Street	12,840	61.6
	Cesar Chavez Street to Sunset Drive	7,300	57.8
	Sunset Drive to Tyler Street	8,410	58.5
	Tyler Street to SR-86	5,440	60.1

ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level

1. Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography.

Source: Based on traffic data within the *Traffic Impact Study*, prepared by Kimley-Horn, 2021. Refer to Appendix B for traffic noise modeling assumptions and results.

As identified in Table 8, the existing traffic-generated noise level on project-vicinity roadways currently ranges from 45.0 dBA CNEL to 63.0 dBA CNEL 100 feet from the centerline. As previously described, CNEL is 24-hour average noise level with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Stationary Sources

The stationary noise sources in the vicinity of the project site are existing residential and commercial properties to the west. Noise sources from residential commercial uses typically include mechanical equipment such as HVAC, automobile-related noise such as cars starting and doors slamming, and landscaping equipment. The noise associated with these sources may represent a single-event noise occurrence or short-term noise.

4.2 Noise Measurements

The Project site is currently vacant and unoccupied. To quantify existing ambient noise levels in the Project area, Kimley-Horn conducted five short-term noise measurements on December 14, 2022; see Appendix A: Existing Ambient Noise Measurements. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site. The 10-minute measurements were taken between 11:03 a.m. and 1:30 p.m. on a Wednesday. Measurements of L_{eq} are considered representative of the noise levels throughout the day. The average noise levels and sources of noise measured at each location are listed in Table 9: Existing Noise Measurements and shown on Exhibit 5: Noise Measurement Locations.

Table 9: Existing Noise Measurements

Site	Location	Measurement Period	Duration	L_{eq} (dBA)
ST-1	Along the south side of Vista Del Norte, approximately 750 feet to the west of the Project site boundary.	11:03 – 11:13 a.m.	10 Minutes	55.2
ST-2	Along the southern side of I-10 freeway, approximately 1,100 feet west of the Project site boundary.	11:24 – 11:34 a.m.	10 Minutes	63.5
ST-3	Along the northern side of I-10 freeway, adjacent to the southwest of the Project site boundary.	12:12 – 12:22 p.m.	10 Minutes	76.4
ST-4	Southeast of intersection of Avenue 48 and Polk Street.	1:00 – 1:10 p.m.	10 Minutes	42.0
ST-5	Southeast of intersection of Avenue 50 and Fillmore Street.	1:20 – 1:30 p.m.	10 Minutes	48.7

Source: Noise measurements taken by Kimley-Horn, December 14, 2022. See Appendix A for noise measurement results.

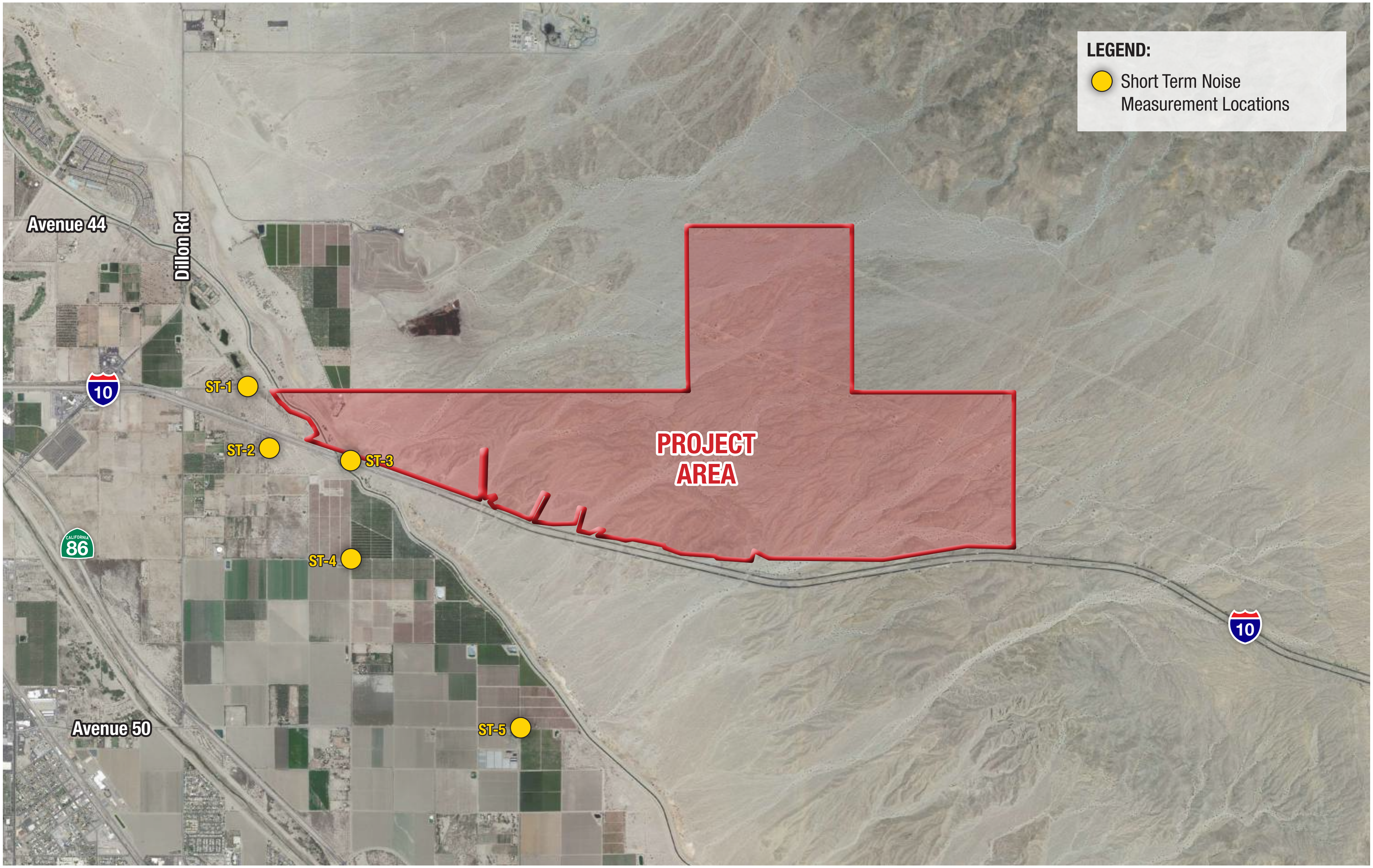

EXHIBIT 5: Noise Measurement Locations
KPC Coachella Specific Plan

Not to Scale

Kimley»Horn
Expect More. Experience Better.

4.3 Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Noise sensitive uses typically include residences, hospitals, schools, childcare facilities, and places of assembly. Vibration sensitive receivers are generally similar to noise sensitive receivers but may also include businesses, such as research facilities and laboratories that use vibration-sensitive equipment. The Project site is close to scattered mix of residential and commercial properties to the west. Noise sensitive land uses nearest to the project site are listed in Table 10: Sensitive Receptors.

Table 10: Sensitive Receptors

Receptor Description	Distance and Direction from the Project
Single-family Residences	820 feet to the west
Family Worship Center	3,000 feet to the west
Multi-family Residences	3,200 feet to the northwest
Source: Google Earth	

5 SIGNIFICANCE CRITERIA AND METHODOLOGY

5.1 CEQA Thresholds

State CEQA Guidelines Appendix G contains analysis guidelines related to noise and vibration. These guidelines have been used by the City to develop thresholds of significance for this analysis. A project would create a significant environmental impact if it would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generate excessive groundborne vibration or groundborne noise levels; and
- 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.

Thresholds

Construction Noise

The City of Coachella's General Plan and Municipal Code does not establish maximum numerical construction noise levels for potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes as the generation of noise levels in excess of standards or as a substantial temporary or periodic noise increase. To evaluate whether the Project will generate potentially significant temporary construction noise levels at sensitive receiver locations, a construction-related noise level threshold has been adopted from the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for evaluating construction noise impacts Therefore, this analysis conservatively uses the FTA's threshold of 80 dBA (8-hour L_{eq}) for residential uses and 90 dBA (8-hour L_{eq}) for non-residential uses to evaluate construction noise impacts.[11]

Operational Noise

<u>Non-Transportation Noise</u>. Non-transportation related noise generators are commonly called "stationary," "fixed," "area," or "point" sources of noise. Industrial processing, mechanical equipment, pumping stations, and heating, ventilating, and air conditioning (HVAC) equipment are examples of fixed location, non-transportation noise sources.

Operational noise is evaluated based on the standards within the City's Noise Ordinance and General Plan. Section 7.04.030 of the City's Municipal Code identifies a daytime (6:00 a.m. – 10:00 p.m.) standard of 55 dBA and a nighttime (10:00 p.m. – 6:00 a.m.) standard of 45 dBA for residential receptors; refer to <u>Table 6</u>). The City's non-residential standards are 65 dBA and 55 dBA during the daytime and nighttime, respectively.

11 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-2, Page 179, September 2018.

Mobile Noise. Traffic noise, including automobiles, trucks, and other motor vehicles is the most pervasive source of noise in the City of Coachella. Traffic generated noise impacts are evaluated based on standards within the General Plan. For traffic noise the City of Coachella General Plan has provide noise and land use compatibility matrix which indicates noise standards using a 24-hour metric such as Ldn or CNEL and with Clearly Compatible, Normally Compatible, Normally Incompatible, and Clearly Incompatible designations for different types of land uses. According to the matrix (Table 5), generally noise levels up to 60 dBA CNEL are Clearly Compatible for all land uses except Commercial-Recreation and Institutional – Civic Center which are considered as Normally Compatible and noise levels above 75 dBA are considered as Clearly Incompatible for the majority of land uses. Therefore, the proposed Project would result in a significant increase in existing traffic noise levels if Project traffic would increase the noise level by 3 dBA CNEL and exceed the Clearly Compatible Standard at an outdoor use area of a designated land use. The environmental baseline is the Without Project condition.

Vibration

The City currently does not have a significance threshold to assess vibration impacts. The Caltrans 2020 Transportation and Construction Vibration Guidance Manual identifies the vibration threshold for human annoyance, vibrations levels of 0.04 in/sec begin to cause annoyance and levels of 0.2 in/sec is used for building damage.

5.2 Methodology

Construction

Construction noise levels were based on typical noise levels generated by construction equipment published by the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA). Construction noise is assessed in dBA L_{eq}. This unit is appropriate because L_{eq} can be used to describe noise level from operation of each piece of equipment separately, and levels can be combined to represent the noise level from all equipment operating during a given period.

Construction noise was modeled to conservatively determine worst-case exterior construction noise levels for each phase of the Project. Construction noise modeling was conducted using the FHWA Roadway Construction Noise Model (RCNM) and includes all equipment running concurrently. Starting at the site perimeter nearest to sensitive receptors, equipment was evenly distributed based on a 30-foot safety zone for heavy construction equipment. The loudest construction equipment were placed nearest to sensitive receptors while less noisy equipment were placed further away. The construction noise levels estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise. The City of Coachella does not establish quantitative construction noise standards. This analysis conservatively uses the FTA's threshold of 80 dBA (8-hour L_{eq}) for residential uses and 90 dBA (8-hour L_{eq}) for commercial/non-residential uses to evaluate construction noise impacts.

Operations

The analysis of the "Without Project" and "With Project" noise environments is based on noise prediction modeling and empirical observations. Reference noise level data are used to estimate the Project's operational noise levels from stationary sources. Noise levels are collected from field noise measurements and other published sources from similar types of activities are used to estimate noise levels expected with the Project's stationary sources. The reference noise levels are used to represent a worst-case noise environment as noise level from stationary sources can vary throughout the day. Operational noise is evaluated based on the City's Noise Ordinance and General Plan standards.

An analysis was conducted of the Project's effect on traffic noise conditions at off-site land uses. "Without Project" traffic noise levels were compared to "With Project" traffic noise levels. The environmental baseline is the "Without Project" condition. The "Without Project" and "With Project" traffic noise levels in the Project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures (walls and buildings), barriers, and topography. The noise attenuating effects of changes in elevation, topography, and intervening structures were not included in the model. Therefore, the modeling effort is considered a worst-case representation of the roadway noise. In general, a 3-dBA increase in traffic noise is barely perceptible to people, while a 5-dBA increase is readily noticeable.

As a result of the Supreme Court decision regarding the assessment of the environment's impacts on projects (*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD*), 62 Cal. 4th 369 (No. S 213478) issued December 17, 2015), it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. As a result, while the noise from existing sources is considered as part of the baseline, the direct effects of exterior noise from nearby noise sources relative to land use compatibility the Project is not a required topic for impact evaluation under CEQA.

Vibration

Groundborne vibration levels associated with Project construction-related activities were evaluated utilizing typical groundborne vibration levels associated with construction equipment, obtained from FTA published data for construction equipment. Potential groundborne vibration impacts related to building/structure damage and interference with sensitive existing operations were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria.

For a structure built traditionally, without assistance from qualified engineers, the FTA guidelines show that a vibration level of up to 0.20 in/sec is considered safe and would not result in any vibration damage. FTA guidelines show that modern engineered buildings built with reinforced-concrete, steel or timber can withstand vibration levels up to 0.50 in/sec and not experience vibration damage. The Caltrans 2020 *Transportation and Construction Vibration Guidance Manual* identifies the vibration threshold for human annoyance, vibrations levels of 0.04 in/sec begin to cause annoyance and levels of 0.2 in/sec is used for building damage.

6 POTENTIAL IMPACTS AND MITIGATION

6.1 Acoustical Impacts

Threshold 6.1 Would the Project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Construction noise typically occurs intermittently and varies depending on the construction activity's nature or phase (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. During construction, exterior noise levels could affect noise-sensitive receptors near the construction site. The nearest sensitive receptors to the project site construction area are existing residential uses to the west with the nearest residential building located approximately 820 feet from the on-site construction area. However, it is noted that construction activities would occur throughout the project site and would not be concentrated at a single point near noise-sensitive receptors.

Construction activities would include site preparation, grading, building construction, paving, and architectural coating. Such activities would require:

- Dozers and tractors during site preparation;
- Excavators, graders, dozers, scrapers, and tractors during grading;
- Cranes, forklifts, generators, tractors, and welders during building construction;
- Pavers, rollers, and paving equipment during paving; and
- Air compressors during architectural coating.

Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Typical noise levels associated with individual construction equipment are listed in Table 11: Typical Construction Noise Levels.

Although the construction equipment noise levels in Table 11 are from FTA's 2018 *Transit Noise and Vibration Impact Assessment Manual*, the noise levels are based on measured data from a U.S. Environmental Protection Agency report which uses data from the 1970s[12], the FHWA Roadway Construction Noise Model which uses data from the early 1990s, and other measured data. Since that time, construction equipment has been required to meet more stringent emissions standards and the additional necessary exhaust systems also reduce noise from what is shown in the table.

12 U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, NTID300.1, December 31, 1971.

Table 11: Typical Construction Noise Levels		
Equipment	**Typical Noise Level (dBA) at 50 feet from Source**	**Typical Noise Level (dBA) at 820 feet from Source[1]**
Air Compressor	80	55.7
Backhoe	80	55.7
Compactor	82	57.7
Concrete Mixer	85	60.7
Concrete Pump	82	57.7
Concrete Vibrator	76	51.7
Crane, Mobile	83	58.7
Dozer	85	60.7
Generator	82	57.7
Grader	85	60.7
Impact Wrench	85	60.7
Jack Hammer	88	63.7
Loader	80	55.7
Paver	85	60.7
Pile-Driver (Impact) [2]	101	76.7
Pneumatic Tool	85	60.7
Pump	77	52.7
Roller	85	60.7
Saw	76	51.7
Scraper	85	60.7
Shovel	82	57.7
Truck	84	59.7

1. Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1 + 20Log(d_1/d_2)$
Where: dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance
2. Pile driving not anticipated during Project construction

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

Section 7.04.070 (Construction Activities) of the City of Coachella Municipal Code exempts noise sources associated with construction activities from the City's established noise standards as long as the activities do not take place except between the hours as set forth as follows:

October 1st through April 30th:

Monday—Friday: 6:00 a.m. to 5:30 p.m.
Saturday: 8:00 a.m. to 5:00 p.m.
Sunday: 8:00 a.m. to 5:00 p.m.
Holidays: 8:00 a.m. to 5:00 p.m.

May 1st through September 30th:

Monday—Friday: 5:00 a.m. to 7:00 p.m.
Saturday: 8:00 a.m. to 5:00 p.m.
Sunday: 8:00 a.m. to 5:00 p.m.
Holidays: 8:00 a.m. to 5:00 p.m.

While the City establishes limits to the hours during which construction activity may take place, it does not identify specific noise level limits for construction noise levels. The City's permitted hours of construction are required in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant impact. However, this analysis conservatively uses the FTA's threshold of 80 dBA and 85 dBA (8-hour L_{eq}) to evaluate construction noise impacts for residential and commercial uses, respectively.[13]

The noise levels calculated in Table 11: Construction Noise Levels, shows estimated exterior construction noise for Phase 1 through Phase 6 with respect to their closest corresponding sensitive receptors. Construction noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor. Construction equipment would operate throughout the project site and the associated noise levels would not occur at a fixed location for extended periods of time.

The nearest existing sensitive receptors are located approximately 820 feet from the Project perimeter, however during Phase 1 construction those receptors are approximately 11,800 feet from the Phase 1 construction area. The nearest sensitive receptors to Phase 2 would be future occupants of Phase 1 located approximately 480 feet from the boundary of the Phase 2 area. The nearest sensitive receptors to Phase 3 would be future occupants of Phase 2 located approximately 430 feet from the boundary of the Phase 3 area. The nearest sensitive receptors to Phase 4 would be future occupants of Phase 1 located approximately 165 feet from of the boundary of the Phase 4 area. The nearest sensitive receptors to Phase 5 would be future occupants of Phase 2 located approximately 425 feet from the boundary of the Phase 5 area. The nearest sensitive receptors to Phase 6 would be future occupants of Phase 4 located approximately 200 feet from the boundary of the Phase 6 area. It should be noted, construction noise levels shown in Table 12: Construction Noise Levels, focus on the closest receptors. Noise levels at receptors further away would be lower.

Table 12 shows that construction noise levels would not exceed the FTA's 80-dBA threshold in any of the phases. Additionally, compliance with Section 7.04.070 (Construction activities exemptions) of the City of Coachella Municipal Code would minimize impacts from construction noise, as construction would be limited to daytime hours. Therefore, Phase 1, Phase 2, Phase 3, Phase 4, Phase 5, and Phase 6 construction activities would result in a less than significant noise impact.

13 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-2, Page 179, September 2018.

Table 12: Construction Noise Levels

Construction Phase	Nearest Sensitive Receptor Location			Worst Case Modeled Exterior Noise Level (dBA L_{eq})	Noise Threshold (dBA L_{eq})[2]	Exceeded?
	Land Use	Direction	Distance (feet)[1]			
Phase 1						
Site Preparation	Existing Off-Site Residential	West	11,800	43.1	80	No
Grading	Existing Off-Site Residential	West	11,800	43.3	80	No
Building Construction	Existing Off-Site Residential	West	11,800	74.0	80	No
Paving	Existing Off-Site Residential	West	11,800	42.0	80	No
Architectural Coating	Existing Off-Site Residential	West	11,800	36.2	80	No
Phase 2						
Site Preparation	Phase 1	Southeast	480	68.3	80	No
Grading	Phase 1	Southeast	480	68.7	80	No
Building Construction	Phase 1	Southeast	480	76.0	80	No
Paving	Phase 1	Southeast	480	68.7	80	No
Architectural Coating	Phase 1	Southeast	480	62.2	80	No
Phase 3						
Site Preparation	Phase 2	East	430	69.5	80	No
Grading	Phase 2	East	430	69.5	80	No
Building Construction	Phase 2	East	430	76.2	80	No
Paving	Phase 2	East	430	69.6	80	No
Architectural Coating	Phase 2	East	430	63.0	80	No
Phase 4						
Site Preparation	Phase 1	West	165	75.8	80	No
Grading	Phase 1	West	165	75.7	80	No
Building Construction	Phase 1	West	165	79.6	80	No
Paving	Phase 1	West	165	76.7	80	No
Architectural Coating	Phase 1	West	165	69.4	80	No
Phase 5						
Site Preparation	Phase 2	West	425	69.6	80	No
Grading	Phase 2	West	425	69.6	80	No
Building Construction	Phase 2	West	425	76.3	80	No
Paving	Phase 2	West	425	69.7	80	No
Architectural Coating	Phase 2	West	425	63.1	80	No

Phase 6						
Site Preparation	Phase 4	West	200	74.6	80	No
Grading	Phase 4	West	200	74.5	80	No
Building Construction	Phase 4	West	200	78.8	80	No
Paving	Phase 4	West	200	75.3	80	No
Architectural Coating	Phase 4	West	200	68.2	80	No
1. Distance is measured from the nearest receptor to the perimeter of each Phase. Equipment was distributed evenly at 30-foot intervals based on a 30-foot safety zone for heavy construction equipment. 2. Threshold from Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* Table 7-3, 2018.						
Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix B for noise modeling results.						

Operations

Project implementation would create new sources of noise in the site vicinity. The mixed-use development's major noise sources include the following:

- Mechanical equipment (i.e. trash compactors, air conditioners, etc.);
- Landscape Maintenance Activities;
- Parking areas (i.e. car door slamming, car radios, engine start-up, and car pass-by); and
- Off-Site Traffic Noise.

Mechanical Equipment

The nearest existing sensitive receptors are residential properties approximately 820 feet to the west of the project site, while north, east, and south of the Project site are vacant. Potential stationary noise sources related to long-term operation of the project site would include mechanical equipment. Mechanical equipment (e.g. heating ventilation and air conditioning [HVAC] equipment) typically generates noise levels of approximately 52 dBA at 50 feet[14]. Based on current site plans, the nearest Project structure would be medium density residential buildings located east of the proposed drainage and other open space areas, approximately 5,000 feet from the nearest offsite residential property (The Villas at the Vineyards). At a minimum distance of 5,000 feet, mechanical equipment noise levels would attenuate to 12 dBA, which is below the City's ambient noise standards of 45 dBA for nighttime (10:00 p.m. to 6:00 a.m.) and 55 dBA for daytime (6:00 a.m. to 10:00 p.m.) for residential receptors (refer to Table 7). Noise from mechanical equipment would also be below the City's non-residential 55 dBA nighttime standard and 65 dBA daytime standards. Noise impacts associated with HVAC equipment would be less than significant. Operation of mechanical equipment would not increase ambient noise levels beyond the acceptable compatible land use noise levels.

At the time of this analysis, identification of specific mechanical equipment and detailed site plans have not been developed. Assuming HVAC units would be located as close as 50 feet from on-site receptors, HVAC noise levels could be approximately 52 dBA which would exceed the City's nighttime noise standard (i.e., 45 dBA). Therefore, **MM NOI-2** would be implemented to ensure noise-generating stationary source equipment would not exceed the City's noise regulations at on-site and off-site receptors. Implementation

[14] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, July 6, 2010.

of **MM NOI-2** would result in a less than significant impact related to stationary noise levels. . Further, the Project would be required to comply with the General Plan and Municipal Code noise standards.

Landscape Maintenance Activities

Development and operation of the Project includes new landscaping that would require periodic maintenance. Noise generated by a gasoline-powered lawnmower is estimated to be approximately 64.4 dBA at 50 feet.[15] Maintenance activities would operate during daytime hours for brief periods of time as allowed by the City of Coachella Municipal Code Section 7.04.075 and would not permanently increase ambient noise levels in the Project vicinity and would be consistent with activities that currently occur at other developed areas in the City. The closest sensitive receptor to the Project site is residential unit located approximately 820 feet to the west (The Villas at the Vineyards). At this distance, a gasoline-powered lawnmower noise level would be attenuated to 40.1 dBA which is below the City's ambient noise daytime standards of 55 dBA for residential receptors. For future on-site receptors, detailed site plans have not been developed and the distances between residential and commercial properties are unknown. However, to reduce GHG emissions, **MM GHG-4** requires all landscape equipment to be 100 percent electric. Electric landscape equipment would generate significantly less noise than gasoline powered equipment, reducing noise levels at both off-site and future on-site sensitive receptors below the City's daytime noise standard. Therefore, the proposed Project would result in a less than significant impact related to landscape maintenance noise levels.

Parking Noise

Parking would be scattered throughout the Project site. Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 53 to 61 dBA.[16] Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 50 feet for normal speech to 50 dBA at 50 feet for very loud speech.[17] It should be noted that parking lot noises are instantaneous noise levels compared to noise standards in the hourly L_{eq} metric, which are averaged over the entire duration of a time period. As a result, actual noise levels over time resulting from parking lot activities would be far lower than the reference levels identified above.

For the purpose of providing a conservative, quantitative estimate of the noise levels that would be generated from the vehicles entering and exiting the parking lot, the methodology recommended by FTA for the general assessment of stationary transit noise sources is used. Using the methodology, the Project's peak hourly noise level that would be generated by the on-site parking levels was estimated using the following FTA equation for a parking lot:

$$L_{eq(h)} = SEL_{ref} + 10 \log (NA/1{,}000) - 35.6$$

Where:

$L_{eq(h)}$ = hourly L_{eq} noise level at 50 feet

15 Ibid.
16 Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.
17 Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden. *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, July 6, 2010.

SEL_{ref} = reference noise level for stationary noise source represented in sound exposure level (SEL) at 50 feet

NA = number of automobiles per hour

35.6 is a constant in the formula, calculated as 10 times the logarithm of the number of seconds in an hour

Based on the peak hour trip generation in the Traffic Study, the worst-case planning area (B-5) would have approximately 1,438 trips during the worst-case peak hour. Using the FTA's reference noise level of 92 dBA SEL[18] at 50 feet from the noise source, the Project's highest peak hour vehicle trips would generate noise levels of approximately 58 dBA L_{eq} at 50 feet from the parking lot. The nearest off-site residential property is 820 feet west of the project site. Based strictly on distance attenuation, parking lot noise at the nearest receptor would be 33.7 dBA which is below the City's residential 45 dBA nighttime standard and 55 dBA daytime standards.

For future on-site receptors, detailed site plans have not been developed and the distances between residential and commercial properties are unknown. Assuming on-site sensitive receptors could be located approximately 30 feet from parking areas within the Project site, parking area noise levels would reach approximately 62.4 dBA. Therefore, parking lot noise levels at the nearest on-site sensitive receptor may exceed the City's residential 45 dBA nighttime standard and 55 dBA daytime standards. **MM NOI-2** would ensure that on-site sensitive receptors are not exposed to noise levels above the City's noise standards. Thus, noise impacts associated with parking lot activity would be less than significant with implementation of **MM NOI-2**. Therefore, noise impacts from parking would be less than significant.

Off-Site Traffic Noise

Implementation of the Project would generate increased traffic volumes along nearby roadway segments. Based on the Traffic Impact Analysis, the proposed Project would result in approximately 84,917 net daily trips in total. The Horizon Year "2045 Without Project" and "2045 With Project" scenarios were compared in Table 13: Horizon Year Traffic Noise Levels. As shown in Table 13, roadway noise levels would range between 46.6 dBA CNEL and 67.1 dBA CNEL at 100 feet from the centerline without the Project and between 55.6 dBA CNEL and 67.6 dBA CNEL with the Project. Project generated traffic would result in a maximum increase of 12.0 dBA. In general, a 3-dBA increase in traffic noise is barely perceptible to people, while a 5-dBA increase is readily noticeable.

Table 13: Horizon Year Traffic Noise Levels

Roadway Segment		2045 Without Project		2045 With Project		Change	Clearly/ Normally Compatible Standard[2]	Significant Impact
		ADT	dBA CNEL[1]	ADT	dBA CNEL[1]			
Dillon Road	I-10 WB Ramps to Vista Del Norte	20,570	67.1	23,220	67.6	0.5	70 / 80	No
Vista Del Norte	Dillon Road to Tyler Street	690	46.6	10,880	58.6	12.0	60 / 65	No
	East of Tyler Street	690	46.6	5,480	55.6	9.0	60 / 70	No
Avenue 50	Leoco Lane to Magnolia Street/Tyler Street	13,830	63.1	13,970	63.1	0.0	60 / 70	No
	Magnolia Street/Tyler Street to SR-86	19,030	64.4	20,020	64.6	0.2	85	No
	Tyler Street to Polk Street	8,990	63.2	12,470	64.6	1.4	60 / 70	No
	Polk Street to Fillmore Street	9,320	63.4	19,000	66.4	3.1	85	No

18 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

	Fillmore Street to I-10 EB Ramps	7,730	59.3	20,770	63.6	4.3	60 / 70	No[3]
Polk Street	Avenue 50 to Avenue 52	3,940	56.3	9,790	60.3	4.0	60 / 70	No[4]
Avenue 52	Van Buren Street to Cesar Chavez Street	22,590	64.0	22,900	64.1	0.1	60 / 70	No
	Cesar Chavez Street to Sunset Drive	18,150	61.8	20,430	62.3	0.5	60 / 70	No
	Sunset Drive to Tyler Street	18,220	61.8	20,680	62.4	0.6	70 / 80	No
	Tyler Street to SR-86	12,580	63.7	15,980	64.8	1.0	60 / 70	No
Internal Road[5]	West of Internal Intersection 1	--	N/A	6,250	54.8	N/A	60 / 70	No
	East of Internal Intersection 1	--	N/A	16,840	59.1	N/A	60 / 70	No
	North of Internal Intersection 5	--	N/A	4,940	53.7	N/A	60 / 70	No
	East of Internal Intersection 5	--	N/A	890	46.3	N/A	60 / 70	No
	Between Internal Intersection 1 and Internal Intersection 5	--	N/A	20,130	59.8	N/A	60 / 70	No
	Between Internal Intersection 5 and Internal Intersection 4	--	N/A	12,880	57.9	N/A	60 / 70	No
	Between Internal Intersection 2 and Internal Intersection 3	--	N/A	24,090	60.6	N/A	60 / 70	No
	Between Internal Intersection 3 and Internal Intersection 4	--	N/A	13,310	58.0	N/A	60 / 70	No
Avenue 50 (Internal)[5]	South of Internal Intersection 2	--	N/A	39,900	62.8	N/A	60 / 70	No
Internal Road[5]	South of Internal Intersection 4	--	N/A	4,330	53.2	N/A	60 / 70	No

ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level.

1. Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography.
2. Land use/noise compatibility is based on the land use along each roadway segment and the standards in *General Plan Update Final EIR* Figure 10-5 (see Table 5). Potential impacts occur when the Project change exceeds 3 dBA and the land use compatibility standard is exceeded at the nearest use (i.e., both must occur).
3. The Avenue 50 from Fillmore Street to I-10 eastbound ramps segment is currently surrounded by vacant land. Planned future development is already required to mitigate traffic noise. Additionally, noise levels are below the Normally Compatible Standard. Therefore, no impact would occur.
4. Noise levels are below the Normally Compatible standard. Additionally, the closest residence to this segment is 130 feet away from the roadway centerline. At 130 feet, the noise level attenuates to 58.0 dBA, which is within the 60 dBA Clearly Compatible standard and impacts are less than significant.
5. Internal roads are future roadways proposed within the project site.

Source: Based on traffic data within the *Traffic Impact Analysis*, prepared by Linscott Law & Greenspan, 2023. Refer to Appendix B for traffic noise modeling assumptions and results.

Table 13 shows that an increase in traffic noise levels along the following roadway segments would exceed 3.0 dBA:

- Vista Del Norte, between Dillon Road and Tyler Street. Although the 12.0 dBA increase in traffic noise may be subjectively heard as a doubling in loudness, the "With Project" noise level (58.6 dBA) would not exceed the 60 dBA Clearly Compatible noise standard for churches and therefore would not result in a significant impact. Impacts along this segment would be less than significant.
- Vista Del Norte, east of Tyler Street. Although the 9.0 dBA increase in traffic noise may be substantial, the "With Project" noise levels (55.6 dBA) would not exceed the 60 dBA Clearly Compatible noise standard for residential uses and therefore would not result in a significant impact. In addition, a solid block wall surrounds the existing residences which would reduce traffic noise by 8 dBA. Impacts along this segment would be less than significant.
- Avenue 50, from Polk Street to Fillmore Street. Although the addition of Project-related traffic would increase noise levels by 3.1 dBA, the With Project noise level (66.4 dBA) would not exceed the 85 dBA Clearly Compatible noise standard for agricultural land uses. Impacts along this segment would be less than significant.

- Avenue 50, from Fillmore Street to I-10 Eastbound Ramps. The With Project noise level along this segment (63.6 dBA) would be 4.3 dBA over No Project conditions. Noise along this roadway segment was also analyzed within the La Entrada Environmental Impact Report (EIR) (2013)[19], which required future development to include sound walls and upgraded windows along Avenue 50 (Mitigation Measure 4.12-3 in the La Entrada EIR). La Entrada EIR Table 4.12.P identifies the noise level along this segment, which is similar to the noise level shown in Table 13. The La Entrada EIR determined that mitigation would reduce roadway noise impacts to less than significant levels. Therefore, as planned future development along this roadway is already required to mitigate traffic noise, impacts would be reduced to meet the City's Clearly Compatible standard.
- Polk Street, from Avenue 50 to Avenue 52. The majority of land uses surrounding this segment are agricultural lands with few scattered residences. Noise levels along this segment (60.3 dBA) would exceed the 60 dBA Clearly Compatible noise standard for residential uses at 100 feet from the roadway centerline. However, the closest residence along this segment is 130 feet from the road centerline. At this distance, traffic noise levels would attenuate to 58.0 dBA, which is within the 60 dBA Clearly Compatible residential standard. Impacts along this segment would be less than significant.

On-Site Traffic Noise

The California Supreme Court in a December 2015 opinion (California Building Industry Association v. Bay Area Air Quality Management District, 62 Cal. 4th 369 [No. S 213478]) confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. Therefore, the analysis of on-site noise is not required under CEQA and is included for informational purposes only. However, because the Project is phased, construction and traffic noise would potentially impact future on-site uses. Therefore, an evaluation of the significance of Project impacts is provided to ensure compliance with City and State Building Code noise standards.

Table 13 shows that the following on-site roadway segments would exceed the 60 dBA Clearly Compatible land use compatibility standard:

- Internal Road from internal intersection 2 and internal intersection 3 (Village B, Planning Areas B-2, B-3, B-4, B-7, OS-6, and OS-7)
- Avenue 50 south of internal intersection 2 (Village B, Planning Areas B-1 and B-3)

Future residents along internal roads within Village B would be exposed to mobile traffic noise along that exceed the City's Clearly Compatible standard at 100 feet from the roadway centerline. However, noise levels would range from 60.6 dBA and 62.8 dBA, which would be within the City's 70 dBA Normally Compatible residential standard. Normally Compatible means that new construction or development should be undertaken only after an analysis of the noise reduction requirements is made and needed noise insulation features included in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning will normally suffice. Traffic noise levels along these on-site roadway segments would attenuate to below the 60 dBA Clearly Compatible standard at 160 feet from the roadway centerline.

19 City of Coachella, *La Entrada Specific Plan Environmental Impact Report*, 2013.

As noted above, the highest exterior noise levels at on-site roadways range from 60.6 dBA and 62.8 dBA. Based on an outdoor to indoor attenuation rate of 25 dB [20] interior noise levels would not exceed the 45 dBA interior standard.

General Plan Policy 5.20 prohibits the use of soundwalls to buffer residential areas from arterial or collector streets. Policy 5.20 recommends designing approaches such as building setbacks, landscaping and other techniques shall be used. Additionally, General Plan Policy 1.2 requires new development projects to implement mitigation measures, where necessary, to reduce noise levels to at least the Normally Compatible standard. Mitigation measures should focus on architectural features, building design and construction, rather than site design features such as excessive setbacks, berms and sound walls, to maintain compatibility with adjacent and surrounding uses.

As noted above, new development that exceed the Normally Compatible standard are required to conduct a noise study to identify noise insulation features for the design. Mitigation Measure (MM) NOI-1 is required to ensure compliance with General Plan Policy 1.2 and Policy 5.20 which requires a detailed acoustical study demonstrating that new residential units would meet the City's Normally Compatible standard by incorporating architectural features instead of excessive setbacks or sound walls. Implementation of MM NOI-1 would result in a less than significant impact.

Mitigation Measures:

MM NOI-1 Prior to issuance of building permits, detailed project-specific acoustical studies for projects within Villages A through E based on architectural plans shall be prepared by a qualified acoustical consultant to demonstrate compliance with General Plan Policy 1.2. The acoustical study shall be submitted to the City's Development Services Department to demonstrate that all residential units would meet the City's 70 dBA exterior noise standard and 45 dBA interior noise standard to the satisfaction of the Development Services Director. This mitigation measure complies with the applicable sections of the California Building Code (Title 24 of the California Code of Regulations). The necessary noise reduction may be achieved by implementing noise control measures at the receiver locations or enclosing loud equipment. The required noise attenuation measures shall be incorporated into the applicable building plans and specifications.

MM NOI-2 Prior to issuance of building permits, detailed project-specific Noise Assessment for projects with Villages A through E shall be prepared, for submittal and approval of the City of Coachella Development Services Department, which demonstrates on-site placement of stationary noise sources at commercial uses would not exceed noise standards established in the City of Coachella General Plan and City of Coachella Municipal Code Section 7.04.030. The Noise Assessment shall verify that stationary noise sources (e.g., loading dock facilities, mechanical equipment, and parking lots) are adequately shielded and/or located at an adequate distance from on-site and off-site sensitive receptors and residences in order to comply with noise regulations established by the City of Coachella.

Level of Significance: Less than significant impact with mitigation incorporated.

20 U.S. EPA, *Protective Noise Levels*, November 1978.

Threshold 6.2 Would the Project generate excessive groundborne vibration or groundborne noise levels?

Construction Vibration

Construction can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved.

The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Transportation and Construction Vibration Guidance Manual prepared by California Department of Transportation (Caltrans)[21], has identified vibration at the level of 0.04 in/sec PPV is barely perceptible and would be considered as annoyance threshold.

The FTA has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.2 in/sec) appears to be conservative. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, for a building that is constructed with reinforced concrete with no plaster, the FTA guidelines show that a vibration level of up to 0.20 in/sec is considered safe and would not result in any construction vibration damage.

Table 14: Typical Construction Equipment Vibration Levels

, lists vibration levels at 25 feet for typical construction equipment. Vibration levels at 60 feet, the distance from the Project boundary to the nearest existing structure (to the north) is also included in Table 14. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in Table 14, based on FTA data, vibration velocities from typical heavy construction equipment operations that would be used during Project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity.

Table 14: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 Feet (in/sec)	Peak Particle Velocity at 60 Feet (in/sec)[1]
Large Bulldozer	0.089	0.024
Caisson Drilling	0.089	0.024
Loaded Trucks	0.076	0.020
Jackhammer	0.035	0.009

[21] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, April 2020.

Small Bulldozer/Tractors	0.003	0.001
1. Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, where: PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance; PPV_{ref} = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018; D = the distance from the equipment to the receiver.		
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.		

The nearest structure to the Project construction site is approximately 60 feet away from the Phase 3 boundary. Table 14 shows that at 60 feet the vibration velocities from construction equipment would not exceed 0.024 in/sec PPV, which is below the Caltrans' 0.04 in/sec PPV threshold for annoyance and FTA's 0.20 in/sec PPV threshold for building damage. Assuming all six large bulldozers and eight tractors anticipated during the site preparation phase of construction were operating along the Phase 3 boundary at the time, the combined vibration would be 0.15 in/sec PPV which is below the FTA's 0.20 in/sec PPV threshold for building damage. Therefore, vibration impacts associated with Project construction would be less than significant.

Operational Vibration

Once operational, the Project would not be a significant source of groundborne vibration. Groundborne vibration nearby the Project currently result from heavy-duty vehicular travel (e.g., refuse trucks, heavy duty trucks, delivery trucks, and transit buses) on the nearby freeways and local roadways. Operations of the proposed Project would include activities associated with residential, commercial, and educational developments that typically would not cause excessive ground-borne vibrations. Due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity. According to the FTA Noise and Vibration Manual, trucks rarely create vibration levels that exceed 70 VdB (equivalent to 0.012 in/sec PPV) when they are on roadways. Therefore, automobiles accessing the Project site or traveling along surrounding roadways would not exceed FTA thresholds for building damage or annoyance. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.3 For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

The closest airport to the Project site is the Jacqueline Cochran Regional Airport located approximately five miles to the southwest. The Project is not within 2.0 miles of a public airport or within an airport land use plan. Additionally, there are no private airstrips located within the Project vicinity. Therefore, the Project would not expose people working in the Project area to excessive airport- or airstrip-related noise levels and no mitigation is required.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6.2 Cumulative Noise Impacts

Cumulative Construction Noise

The Project's construction activities would not result in a substantial temporary increase in ambient noise levels. Construction noise would be periodic and temporary noise impacts that would cease upon completion of construction activities. The Project would contribute to other proximate construction project noise impacts if construction activities were conducted concurrently. However, based on the noise analysis above, the Project's construction-related noise impacts would be less than significant following the City of Coachella Municipal Code.

Construction activities at other planned and approved projects near the Project site would be required to comply with applicable City rules related to noise and would take place during daytime hours on the days permitted by the applicable Municipal Code, and projects requiring discretionary City approvals would be required to evaluate construction noise impacts, comply with the City's standard conditions of approval, and implement mitigation, if necessary, to minimize noise impacts. Construction noise impacts are by nature localized. Based on the fact that noise dissipates as it travels away from its source, noise impacts would be limited to the Project site and vicinity. Therefore, Project construction would not result in a cumulatively considerable contribution to significant cumulative impacts, assuming such a cumulative impact existed, and impacts in this regard are not cumulatively considerable.

Cumulative Operational Noise

Cumulative Off-Site Traffic Noise

Cumulative noise impacts describe how much noise levels are projected to increase over existing conditions with the development of the proposed Project and other foreseeable projects. Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to buildout of the proposed Project and other projects in the vicinity. Cumulative increases in traffic noise levels were estimated by comparing the Existing and Horizon Year Without Project scenarios to the Horizon Year With Project scenario. The traffic analysis considers cumulative traffic from future growth assumed in the transportation model, as well as cumulative projects.

A project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds perception level (i.e., auditory level increase) threshold. The following criteria is used to evaluate the combined and incremental effects of the cumulative noise increase.

- *Combined Effect.* The cumulative with Project noise level ("Horizon Year With Project") would cause a significant cumulative impact if a 3.0 dB increase over "Existing" conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use. Although there may be a significant noise increase due to the proposed Project in combination with other related projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed Project.
- *Incremental Effects*. The "Horizon Year With Project" causes a 1.0 dBA increase in noise over the "Opening Year Without Project" noise level.

A significant impact would result only if both the combined and incremental effects criteria have been exceeded. Noise by definition is a localized phenomenon and reduces as distance from the source increases. Consequently, only the proposed Project and growth due to occur in the general area would contribute to cumulative noise impacts.

Table 15: Cumulative Off-Site Traffic Noise Levels identifies the traffic noise effects along roadway segments in the Project vicinity for "Existing," "Horizon Year Without Project," and "Horizon Year With Project," conditions, including incremental and net cumulative impacts.

Table 15: Cumulative Off-Site Traffic Noise Levels

Roadway Segment		Existing[1] (dBA)	Horizon Year Without Project[1] (dBA)	Horizon Year With Project[1] (dBA)	Combined Effects	Incremental Effects	Clearly/ Normally Compatible Standard	Cumulatively Significant Impact? [2]
					Difference Between Existing and Horizon Year With Project	Difference Between Horizon Year Without Project and Horizon Year With Project		
Dillon Road	I-10 WB Ramps to Vista Del Norte	63.0	67.1	67.6	4.6	0.5	70 / 80	No
Vista Del Norte	Dillon Road to Tyler St.	46.5	46.6	58.6	12.1	12.0	70 / 80	No [3]
	East of Tyler Street	46.5	46.6	55.6	9.1	9.0	60 / 70	No [4]
Avenue 50	Leoco Lane to Magnolia Street/Tyler Street	60.7	63.1	63.1	2.4	0.0	60 / 70	No
	Magnolia Street/Tyler Street to SR-86	60.3	64.4	64.6	4.3	0.2	85	No
	Tyler Street to Polk St.	50.6	63.2	64.6	14.0	1.4	60 / 70	No [5]
	Polk Street to Fillmore Street	45.1	63.4	66.4	21.3	3.1	85	No [6]
	Fillmore Street to I-10 EB Ramps	N/A	59.3	63.6	N/A	4.3	60 / 70	No [7]
Polk Street	Avenue 50 to Ave. 52	45.0	56.3	60.3	15.3	4.0	60 / 70	No [8]
Avenue 52	Van Buren Street to Cesar Chavez Street	61.6	64.0	64.1	2.5	0.1	60 / 70	No
	Cesar Chavez Street to Sunset Drive	57.8	61.8	62.3	4.5	0.5	60 / 70	No
	Sunset Drive to Tyler St.	58.5	61.8	62.4	3.9	0.6	70 / 80	No
	Tyler Street to SR-86	60.1	63.7	64.8	4.7	1.1	60 / 65	No [9]
Internal Road [9]	West of Internal Intersection 1	N/A	N/A	54.8	N/A	N/A	60 / 70	No
	East of Internal Intersection 1	N/A	N/A	59.1	N/A	N/A	60 / 70	No
	North of Internal Intersection 5	N/A	N/A	53.7	N/A	N/A	60 / 70	No
	East of Internal Intersection 5	N/A	N/A	46.3	N/A	N/A	60 / 70	No
	Between Internal Intersection 1 and Internal Intersection 5	N/A	N/A	59.8	N/A	N/A	60 / 70	No
	Between Internal Intersection 5 and Internal Intersection 4	N/A	N/A	57.9	N/A	N/A	60 / 70	No
	Between Internal Intersection 2 and Internal Intersection 3	N/A	N/A	60.6	N/A	N/A	60 / 70	No
	Between Internal Intersection 3 and Internal Intersection 4	N/A	N/A	58.0	N/A	N/A	60 / 70	No
Ave. 50 (Internal) [10]	South of Internal Intersection 2	N/A	N/A	62.8	N/A	N/A	60 / 70	No
Internal Road [10]	South of Internal Intersection 4	N/A	N/A	53.2	N/A	N/A	60 / 70	No

ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level.

Table 15: Cumulative Off-Site Traffic Noise Levels							
Roadway Segment	**Existing[1] (dBA)**	**Horizon Year Without Project[1] (dBA)**	**Horizon Year With Project[1] (dBA)**	**Combined Effects**	**Incremental Effects**	**Clearly/ Normally Compatible Standard**	**Cumulatively Significant Impact? [2]**
				Difference Between Existing and Horizon Year With Project	**Difference Between Horizon Year Without Project and Horizon Year With Project**		
1. Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography. 2. Potential impacts occur when the Project change exceeds 65 dBA CNEL and a 3 dBA increase (i.e., both must occur) at the receiving noise-sensitive land use. 3. Noise levels would not exceed the 70 dBA Clearly Compatible noise standard for commercial land uses. 4. Noise levels would not exceed the 60 dBA Clearly Compatible noise standard for residential land uses. 5. Noise levels are below the Normally Compatible standard of 70 dBA for residential land uses. 6. Noise levels would be 66.4 dBA and would not exceed the 85 dBA Clearly Compatible noise standard for agricultural land uses. 7. The Avenue 50 from Fillmore Street to I-10 eastbound ramps segment is currently surrounded by vacant land. Planned future development is already required to mitigate traffic noise. Additionally, noise levels are below the Normally Compatible Standard. Therefore, no impact would occur. 8. Noise levels are below the Normally Compatible standard. Additionally, the closest residence to this segment is 130 feet away from the roadway centerline. At 130 feet, the noise level attenuates to 58.0 dBA, which is within the 60 dBA Clearly Compatible standard and impacts are less than significant. 9. Noise levels are below the Normally Compatible standard of 65 dBA Institutional-General (School). 10. Internal roads are future roadways proposed within the project site.							
Source: Based on traffic data within the *Traffic Impact Analysis*, prepared by Linscott Law & Greenspan, 2024. Refer to Appendix B for traffic noise modeling assumptions and results.							

Table 15 shows the volume of traffic generated by the Project would potentially meet the criteria for cumulative noise increases along several road segments. The noise levels along the following roadway segments result in combined effects and incremental effects:

- Vista Del Norte from Dillon Road to Tyler Street. Although noise levels would exceed the incremental threshold, the With Project noise levels would be 58.6 dBA and would not exceed the 70 dBA Clearly Compatible noise standard for commercial land uses. Impacts along this segment would be less than significant.

- Avenue 50 from Tyler Street to Polk Street. Although noise levels in this segment would exceed the 60 dBA Clearly Compatible residential noise standard, the 70 dBA Normally Compatible residential noise standard would not be exceeded. There are few residences located along this segment. However, the primary outdoor space appears to be in the back yard and not along the roadway. Impacts along this segment would be less than significant.

- Avenue 50 from Polk Street to Fillmore Street. Noise levels would be 66.4 dBA and would not exceed the 85 dBA Clearly Compatible noise standard for agricultural land uses. Impacts along this segment would be less than significant.

- Polk Street from Avenue 50 Avenue 52. The majority of land uses surrounding this segment are agricultural lands with few scattered residences. Noise levels in this segment would be 60.3 dBA and would exceed the 60 dBA Clearly Compatible noise standard for residential uses at 100 feet from the roadway centerline. However, the closest residence along this segment is 130 feet from the road centerline. At this distance, traffic noise levels would attenuate to 58.0 dBA CNEL, which is below the 60 dBA residential standard. Impacts along this segment would be less than significant.

- Avenue 52 from Tyler Street to SR-86. Although noise levels in this segment would exceed the 60 dBA Clearly Compatible Institutional-General (School) noise standard, the 65 dBA Normally Compatible residential noise standard would not be exceeded. The With Project noise level would be 64.8 dBA. Interior noise levels would be 39.8 dBA with the standard 25 dBA exterior-to-interior attenuation rate. As interior noise levels would not exceed the 45 dBA standard, impacts along this segment would be less than significant.

As noted above, these five roadway segments would exceed the combined and incremental effect thresholds but do not exceed the Normally Acceptable standard which is applicable for existing buildings that use conventional construction, are able to close their windows, and include a fresh air supply system or air conditioning. Standard construction provides 25 dBA of exterior-to-interior noise attenuation with windows closed[22] and interior noise levels would be below the 45 dBA CNEL standard. However, it cannot be assumed that all houses along these roadway segments have air conditioning and as a result may require the windows to be open for cooling. Therefore, these roadway segments have also been conservatively analyzed assuming an "open window condition". The exterior-to-interior noise attenuation rate is 15 dBA with windows open[23] and, as a result, interior noise levels could exceed the 45 dBA standard for existing residential units along Avenue 50 from Tyler Street to Polk Street and Avenue 52 from Tyler Street to SR-86, resulting in a potentially significant impact if windows were left open.

Feasible mitigation is not available to reduce traffic noise. Typically, feasible mitigation measures for off-site roadway noise impacts includes repairing the roads with rubberized asphalt and developing sound walls or attenuation barriers to minimize noise impacts. However, this mitigation can only be imposed on on-site roadways since the Applicant would not have authorization or control to make off-site improvements. As impacts would also occur on off-site roadways and properties, it is usually infeasible for the Applicant to implement these measures. Sound walls would be infeasible due to impacts on right of way, restricted views, and not being proportional to the barely perceptible[24] increase in sound compared with the No Project scenario. Rubberized asphalt could be considered by the City's public works department in the future as part of scheduled maintenance funding, but it would not be roughly proportional to impose paving costs on the Project for a barely perceptible sound level increase. Therefore, mitigation measures to reduce the potentially significant traffic noise impact along Avenue 50 from Tyler Street to Polk Street and Avenue 52 from Tyler Street to SR-86 are not feasible. Noise levels along these segments would still be within the Normally Compatible standard. However, as the Clearly Compatible standard would be exceeded, the Normally Compatible standard would only apply to buildings that were built using conventional construction methods, can close their windows, and include a fresh air supply or air conditioning. As these conditions cannot be confirmed it is conservatively assumed that Project-specific noise impacts would be cumulatively considerable along these roadway segments and impacts would be significant and unavoidable.

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22 United States Environmental Protection Agency, *Protective Noise Levels (EPA 550/9-79-100)*, 1979.

23 Ibid.

24 Per the Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), a 3-dBA increase in traffic noise is barely perceptible to people, while a 5-dBA increase is readily noticeable. The incremental effects noise increase for Cherry Valley Boulevard shown on Table 19 range from 0.9 dBA to 1.9 dBA and would be below the 3-dBA barely perceptible standard.

Cumulative Stationary Noise

Stationary noise sources of the proposed Project would result in an incremental increase in non-transportation noise sources in the Project vicinity. However, as discussed above, operational noise caused by the proposed Project would be less than significant. Similar to the proposed Project, other planned and approved projects would be required to mitigate for stationary noise impacts at nearby sensitive receptors, if necessary. As stationary noise sources are generally localized, there is a limited potential for other projects to contribute to cumulative noise impacts.

No known past, present, or reasonably foreseeable projects would combine with the operational noise levels generated by the Project to increase noise levels above acceptable standards because each project must comply with applicable City regulations that limit operational noise. Therefore, the Project, together with other projects, would not create a significant cumulative impact, and even if there was such a significant cumulative impact, the Project would not make a cumulatively considerable contribution to significant cumulative operational noises.

Given that noise dissipates as it travels away from its source, operational noise impacts from on-site activities and other stationary sources would be limited to the Project site and vicinity. Thus, cumulative operational noise impacts from related projects, in conjunction with Project specific noise impacts, would not be cumulatively significant.

Mitigation Measures: No feasible mitigation is available to reduce roadway noise.

Level of Significance: Significant impact for roadway traffic noise. All other impacts would not be cumulatively considerable.

7 REFERENCES

1. California Department of Transportation, *California Vehicle Noise Emission Levels*, 1987.
2. California Department of Transportation, *Traffic Noise Analysis Protocol*, 2020.
3. California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, 2013.
4. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, 2020.
5. City of Coachella, Coachella *General Plan Update*, 2015.
6. City of Coachella, *La Entrada Specific Plan Environmental Impact Report*, 2013.
7. City of Coachella, *Municipal Code*, 2022.
8. Cowan, James P., *Handbook of Environmental Acoustics*, 1994.
9. Federal Highway Administration, *Noise Fundamentals*, 2017.
10. Federal Highway Administration, *Noise Measurement Handbook – Final Report*, 2018.
11. Federal Highway Administration, *Roadway Construction Noise Model*, 2006.
12. Federal Highway Administration, *Roadway Construction Noise Model User's Guide Final Report*, 2006.
13. Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, 1992.
14. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.
15. Linscott Law & Greenspan Engineers, *Traffic Impact Analysis Scope of Work for KPC Coachella Specific Plan – Coachella, California*, 2022.
16. United States Environmental Protection Agency, *Protective Noise Levels (EPA 550/9-79-100)*, 1979.

Appendix A

Existing Ambient Noise Measurements

Noise Measurement Field Data

Project:	KPC Coachella	**Job Number:**	194079001
Site No.:	1	**Date:**	12/14/2022
Analyst:	Blake Thomas and Breanna Carillo Ruiz	**Time:**	11:03-11:13 AM
Location:			
Noise Sources:	Freeway Traffic, Vista Del Norte Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
55.2	48.9	61.4	85.4

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	60
Wind (mph):	1 mph
Sky:	Clear
Bar. Pressure:	30.2"
Humidity:	35%

Photo:

Kimley»Horn

Summary

File Name on Meter	ST-.028.s
File Name on PC	LxTse_0007061-20221214 110341-ST-.028.ldbin
Serial Number	0007061
Model	SoundExpert® LxT
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-12-14 11:03:41
Stop	2022-12-14 11:13:41
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-12-14 07:52:53
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	FF:90 2116		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Frequency Weighting	A Weighting		
OBA Max Spectrum	At LMax		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.7**	76.7	81.7 dB
Under Range Limit	**24.4**	25.6	31.9 dB
Noise Floor	15.3	16.5	22.8 dB
	First	**Second**	**Third**
Instrument Identification	Kimley-Horn and Associates	1100 W. Town&Country Rd, #700	Orange, CA 92868

Results

LAeq	55.2 dB	
LAE	83.0 dB	
EA	22.075 µPa²h	
LApeak (max)	2022-12-14 11:03:48	85.4 dB
LASmax	2022-12-14 11:11:18	61.4 dB
LASmin	2022-12-14 11:06:54	48.9 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s

LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	Ldn	LDay 07:00-22:00	LNight 22:00-07:00	Lden
	55.2	55.2	-99.9	55.2

LCeq	67.8 dB
LAeq	55.2 dB
LCeq - LAeq	12.6 dB
LAIeq	56.5 dB
LAeq	55.2 dB
LAIeq - LAeq	1.3 dB

	A		C	
	dB	Time Stamp	dB	Time Stamp
Leq	55.2		67.8	
Ls(max)	61.4	2022/12/14 11:11:18		
Ls(min)	48.9	2022/12/14 11:06:54		
LPeak(max)	85.4	2022/12/14 11:03:48		

Overload Count	0
Overload Duration	0.0 s
OBA Overload Count	0
OBA Overload Duration	0.0 s

Statistics

LA 5.00	58.2 dB
LA 10.00	57.5 dB
LA 33.30	55.8 dB
LA 50.00	54.5 dB
LA 66.60	53.7 dB
LA 90.00	52.1 dB

Calibration History

Preamp	Date	dB re. 1V/Pa	6.3
PRMLxT1L	2022-12-14 07:52:53	-29.37	85.92
PRMLxT1L	2022-12-06 14:22:15	-29.25	49.11
PRMLxT1L	2022-11-15 08:15:25	-29.11	73.23
PRMLxT1L	2022-11-15 08:15:00	-29.17	64.95
PRMLxT1L	2022-11-10 12:29:27	-27.95	68.98
PRMLxT1L	2022-11-10 11:29:24	-27.15	57.93
PRMLxT1L	2022-11-10 07:03:07	-29.01	83.04
PRMLxT1L	2022-10-25 17:28:00	-28.81	53.32
PRMLxT1L	2022-10-25 15:33:16	-28.88	35.54
PRMLxT1L	2022-10-25 14:03:30	-28.83	65.85
PRMLxT1L	2022-10-20 09:11:57	-28.87	52.15

Noise Measurement Field Data

Project:	KPC Coachella	**Job Number:**	194079001
Site No.:	2	**Date:**	12/14/2022
Analyst:	Blake Thomas and Breanna Carillo Ruiz	**Time:**	11:24-11:34 AM
Location:			
Noise Sources:	Freeway Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
63.5	48.3	75.5	89.9

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	60
Wind (mph):	1 mph
Sky:	Clear
Bar. Pressure:	30.2
Humidity:	35%

Photo:

Kimley»Horn

Summary

File Name on Meter	ST-.029.s
File Name on PC	LxTse_0007061-20221214 112421-ST-.029.ldbin
Serial Number	0007061
Model	SoundExpert® LxT
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-12-14 11:24:21
Stop	2022-12-14 11:34:21
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-12-14 07:52:53
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	FF:90 2116		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Frequency Weighting	A Weighting		
OBA Max Spectrum	At LMax		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.7**	76.7	81.7 dB
Under Range Limit	**24.4**	25.6	31.9 dB
Noise Floor	15.3	16.5	22.8 dB
	First	**Second**	**Third**
Instrument Identification	Kimley-Horn and Associates	1100 W. Town&Country Rd, #700	Orange, CA 92868

Results

LAeq	63.5 dB	
LAE	91.3 dB	
EA	149.248 µPa²h	
LApeak (max)	2022-12-14 11:29:38	89.9 dB
LASmax	2022-12-14 11:29:38	75.5 dB
LASmin	2022-12-14 11:30:52	48.3 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s

LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**
	63.5	63.5	-99.9	63.5

LCeq	73.9 dB
LAeq	63.5 dB
LCeq - LAeq	10.4 dB
LAIeq	65.0 dB
LAeq	63.5 dB
LAIeq - LAeq	1.5 dB

	A		**C**	
	dB	**Time Stamp**	**dB**	**Time Stamp**
Leq	63.5		73.9	
Ls(max)	75.5	2022/12/14 11:29:38		
Ls(min)	48.3	2022/12/14 11:30:52		
LPeak(max)	89.9	2022/12/14 11:29:38		

Overload Count	0
Overload Duration	0.0 s
OBA Overload Count	0
OBA Overload Duration	0.0 s

Statistics

LA 5.00	67.8 dB
LA 10.00	66.6 dB
LA 33.30	63.6 dB
LA 50.00	61.9 dB
LA 66.60	60.0 dB
LA 90.00	54.6 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**
PRMLxT1L	2022-12-14 07:52:53	-29.37	85.92
PRMLxT1L	2022-12-06 14:22:15	-29.25	49.11
PRMLxT1L	2022-11-15 08:15:25	-29.11	73.23
PRMLxT1L	2022-11-15 08:15:00	-29.17	64.95
PRMLxT1L	2022-11-10 12:29:27	-27.95	68.98
PRMLxT1L	2022-11-10 11:29:24	-27.15	57.93
PRMLxT1L	2022-11-10 07:03:07	-29.01	83.04
PRMLxT1L	2022-10-25 17:28:00	-28.81	53.32
PRMLxT1L	2022-10-25 15:33:16	-28.88	35.54
PRMLxT1L	2022-10-25 14:03:30	-28.83	65.85
PRMLxT1L	2022-10-20 09:11:57	-28.87	52.15

Noise Measurement Field Data

Project:	KPC Coachella	**Job Number:**	194079001
Site No.:	3	**Date:**	12/14/2022
Analyst:	Blake Thomas and Breanna Carillo Ruiz	**Time:**	12:12-12:24 PM
Location:			
Noise Sources:	Freeway Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
76.4	58.9	86.2	113.8

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	55
Wind (mph):	1 mph
Sky:	Clear
Bar. Pressure:	30.2
Humidity:	35%

Photo:

Kimley»Horn

Summary

File Name on Meter	ST-.030.s
File Name on PC	LxTse_0007061-20221214 121204-ST-.030.ldbin
Serial Number	0007061
Model	SoundExpert® LxT
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-12-14 12:12:04
Stop	2022-12-14 12:22:04
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-12-14 07:52:53
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	FF:90 2116		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Frequency Weighting	A Weighting		
OBA Max Spectrum	At LMax		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.7**	76.7	81.7 dB
Under Range Limit	**24.4**	25.6	31.9 dB
Noise Floor	15.3	16.5	22.8 dB
	First	**Second**	**Third**
Instrument Identification	Kimley-Horn and Associates	1100 W. Town&Country Rd, #700	Orange, CA 92868

Results

LAeq	76.4 dB	
LAE	104.2 dB	
EA	2.910 mPa²h	
LApeak (max)	2022-12-14 12:12:20	113.8 dB
LASmax	2022-12-14 12:12:20	86.2 dB
LASmin	2022-12-14 12:13:02	58.9 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	2	3.3 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s

LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**
	76.4	76.4	-99.9	76.4

LCeq	82.3 dB
LAeq	76.4 dB
LCeq - LAeq	5.9 dB
LAIeq	78.3 dB
LAeq	76.4 dB
LAIeq - LAeq	1.9 dB

	A		**C**	
	dB	**Time Stamp**	**dB**	**Time Stamp**
Leq	76.4		82.3	
LS(max)	86.2	2022/12/14 12:12:20		
LS(min)	58.9	2022/12/14 12:13:02		
LPeak(max)	113.8	2022/12/14 12:12:20		

Overload Count	0
Overload Duration	0.0 s
OBA Overload Count	0
OBA Overload Duration	0.0 s

Statistics

LA 5.00	80.6 dB
LA 10.00	79.8 dB
LA 33.30	76.9 dB
LA 50.00	74.9 dB
LA 66.60	72.8 dB
LA 90.00	67.1 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**
PRMLxT1L	2022-12-14 07:52:53	-29.37	85.92
PRMLxT1L	2022-12-06 14:22:15	-29.25	49.11
PRMLxT1L	2022-11-15 08:15:25	-29.11	73.23
PRMLxT1L	2022-11-15 08:15:00	-29.17	64.95
PRMLxT1L	2022-11-10 12:29:27	-27.95	68.98
PRMLxT1L	2022-11-10 11:29:24	-27.15	57.93
PRMLxT1L	2022-11-10 07:03:07	-29.01	83.04
PRMLxT1L	2022-10-25 17:28:00	-28.81	53.32
PRMLxT1L	2022-10-25 15:33:16	-28.88	35.54
PRMLxT1L	2022-10-25 14:03:30	-28.83	65.85
PRMLxT1L	2022-10-20 09:11:57	-28.87	52.15

Noise Measurement Field Data

Project:	KPC Coachella	**Job Number:**	194079001
Site No.:	4	**Date:**	12/14/2022
Analyst:	Blake Thomas and Breanna Carillo Ruiz	**Time:**	1:00-1:10 PM
Location:			
Noise Sources:	Water (Irrigation), Freeway Traffic (far), Road Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
42.0	40.3	49.9	65.1

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	
Wind (mph):	
Sky:	
Bar. Pressure:	
Humidity:	

Photo:

Kimley»Horn

Summary

File Name on Meter	ST-.032.s
File Name on PC	LxTse_0007061-20221214 130043-ST-.032.ldbin
Serial Number	0007061
Model	SoundExpert® LxT
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-12-14 13:00:43
Stop	2022-12-14 13:10:43
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-12-14 07:52:53
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	FF:90 2116		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Frequency Weighting	A Weighting		
OBA Max Spectrum	At LMax		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.7**	76.7	81.7 dB
Under Range Limit	**24.4**	25.6	31.9 dB
Noise Floor	15.3	16.5	22.8 dB
	First	**Second**	**Third**
Instrument Identification	Kimley-Horn and Associates	1100 W. Town&Country Rd, #700	Orange, CA 92868

Results

LAeq	42.0 dB	
LAE	69.8 dB	
EA	1.057 µPa²h	
LApeak (max)	2022-12-14 13:09:39	65.1 dB
LASmax	2022-12-14 13:09:40	49.9 dB
LASmin	2022-12-14 13:01:17	40.3 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s

LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**
	42.0	42.0	-99.9	42.0

LCeq	59.2 dB
LAeq	42.0 dB
LCeq - LAeq	17.2 dB
LAIeq	43.2 dB
LAeq	42.0 dB
LAIeq - LAeq	1.2 dB

	A		**C**	
	dB	**Time Stamp**	**dB**	**Time Stamp**
Leq	42.0		59.2	
LS(max)	49.9	2022/12/14 13:09:40		
LS(min)	40.3	2022/12/14 13:01:17		
LPeak(max)	65.1	2022/12/14 13:09:39		

Overload Count	0
Overload Duration	0.0 s
OBA Overload Count	0
OBA Overload Duration	0.0 s

Statistics

LA 5.00	44.8 dB
LA 10.00	43.4 dB
LA 33.30	41.5 dB
LA 50.00	41.3 dB
LA 66.60	41.2 dB
LA 90.00	40.9 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**
PRMLxT1L	2022-12-14 07:52:53	-29.37	85.92
PRMLxT1L	2022-12-06 14:22:15	-29.25	49.11
PRMLxT1L	2022-11-15 08:15:25	-29.11	73.23
PRMLxT1L	2022-11-15 08:15:00	-29.17	64.95
PRMLxT1L	2022-11-10 12:29:27	-27.95	68.98
PRMLxT1L	2022-11-10 11:29:24	-27.15	57.93
PRMLxT1L	2022-11-10 07:03:07	-29.01	83.04
PRMLxT1L	2022-10-25 17:28:00	-28.81	53.32
PRMLxT1L	2022-10-25 15:33:16	-28.88	35.54
PRMLxT1L	2022-10-25 14:03:30	-28.83	65.85
PRMLxT1L	2022-10-20 09:11:57	-28.87	52.15

Noise Measurement Field Data

Project:	KPC Coachella	**Job Number:**	194079001
Site No.:	5	**Date:**	12/14/2022
Analyst:	Blake Thomas and Breanna Carillo Ruiz	**Time:**	1:20-1:30 PM
Location:			
Noise Sources:	Water (Irrigation), Filmore Street Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
48.7	33.7	67.9	85.0

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	63
Wind (mph):	1 mph
Sky:	Clear
Bar. Pressure:	30.2
Humidity:	35%

Photo:

Kimley»Horn

Summary

File Name on Meter	ST-.033.s		
File Name on PC	LxTse_0007061-20221214 131959-ST-.033.ldbin		
Serial Number	0007061		
Model	SoundExpert® LxT		
Firmware Version	2.404		
User			
Location			
Job Description			
Note			

Measurement

Description			
Start	2022-12-14 13:19:59		
Stop	2022-12-14 13:29:59		
Duration	00:10:00.0		
Run Time	00:10:00.0		
Pause	00:00:00.0		
Pre-Calibration	2022-12-14 07:52:53		
Post-Calibration	None		
Calibration Deviation	---		

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	FF:90 2116		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Frequency Weighting	A Weighting		
OBA Max Spectrum	At LMax		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.7**	76.7	81.7 dB
Under Range Limit	**24.4**	25.6	31.9 dB
Noise Floor	15.3	16.5	22.8 dB
	First	**Second**	**Third**
Instrument Identification	Kimley-Horn and Associates	1100 W. Town&Country Rd, #700	Orange, CA 92868

Results

LAeq	48.7 dB	
LAE	76.5 dB	
EA	4.942 µPa²h	
LApeak (max)	2022-12-14 13:28:48	85.0 dB
LASmax	2022-12-14 13:28:48	67.9 dB
LASmin	2022-12-14 13:25:29	33.7 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s

LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**
	48.7	48.7	-99.9	48.7

LCeq	60.1 dB
LAeq	48.7 dB
LCeq - LAeq	11.4 dB
LAIeq	51.7 dB
LAeq	48.7 dB
LAIeq - LAeq	3.0 dB

	A		**C**	
	dB	**Time Stamp**	**dB**	**Time Stamp**
Leq	48.7		60.1	
LS(max)	67.9	2022/12/14 13:28:48		
LS(min)	33.7	2022/12/14 13:25:29		
LPeak(max)	85.0	2022/12/14 13:28:48		

Overload Count	0
Overload Duration	0.0 s
OBA Overload Count	0
OBA Overload Duration	0.0 s

Statistics

LA 5.00	53.1 dB
LA 10.00	49.6 dB
LA 33.30	42.2 dB
LA 50.00	39.3 dB
LA 66.60	37.2 dB
LA 90.00	34.6 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**
PRMLxT1L	2022-12-14 07:52:53	-29.37	85.92
PRMLxT1L	2022-12-06 14:22:15	-29.25	49.11
PRMLxT1L	2022-11-15 08:15:25	-29.11	73.23
PRMLxT1L	2022-11-15 08:15:00	-29.17	64.95
PRMLxT1L	2022-11-10 12:29:27	-27.95	68.98
PRMLxT1L	2022-11-10 11:29:24	-27.15	57.93
PRMLxT1L	2022-11-10 07:03:07	-29.01	83.04
PRMLxT1L	2022-10-25 17:28:00	-28.81	53.32
PRMLxT1L	2022-10-25 15:33:16	-28.88	35.54
PRMLxT1L	2022-10-25 14:03:30	-28.83	65.85
PRMLxT1L	2022-10-20 09:11:57	-28.87	52.15

Appendix B

Noise Modeling Data

Project: **KPC Coachella Phase 1**

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

	Receptor (Land Use)	Average Distance (feet)	Distance to Receptor (feet)	Shielding	Direction
1	Off-Site Existing Residential	15,000	11,800	0	W

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Site Preparation							
	Tractor	1	40%	84	11,800	36.5	32.6
	Tractor	1	40%	84	11,830	36.5	32.5
	Tractor	1	40%	84	11,860	36.5	32.5
	Tractor	1	40%	84	11,890	36.5	32.5
	Tractor	1	40%	84	11,920	36.5	32.5
	Tractor	1	40%	84	11,950	36.4	32.5
	Tractor	1	40%	84	11,980	36.4	32.4
	Tractor	1	40%	84	12,010	36.4	32.4
	Dozer	1	40%	82	12,040	34.1	30.1
	Dozer	1	40%	82	12,070	34.0	30.1
	Dozer	1	40%	82	12,100	34.0	30.0
	Dozer	1	40%	82	12,130	34.0	30.0
	Dozer	1	40%	82	12,160	34.0	30.0
	Dozer	1	40%	82	12,190	34.0	30.0
	Combined LEQ						**43.1**
Grading							
	Grader	1	40%	85	11,800	37.5	33.6
	Grader	1	40%	85	11,830	37.5	33.5
	Excavator	1	40%	81	11,860	33.2	29.2
	Excavator	1	40%	81	11,890	33.2	29.2
	Dozer	1	40%	82	11,920	34.2	30.2
	Dozer	1	40%	82	11,950	34.1	30.2
	Scraper	1	40%	84	11,980	36.0	32.0
	Scraper	1	40%	84	12,010	36.0	32.0
	Scraper	1	40%	84	12,040	36.0	32.0
	Scraper	1	40%	84	12,070	35.9	32.0
	Tractor	1	40%	84	12,100	36.3	32.3
	Tractor	1	40%	84	12,130	36.3	32.3
	Tractor	1	40%	84	12,160	36.3	32.3
	Tractor	1	40%	84	12,190	36.3	32.3
	Combined LEQ						**43.3**
Building Construction							
	All Other Equipment > 5 HP	1	50%	85	11,800	37.5	34.5
	All Other Equipment > 5 HP	1	50%	85	11,830	37.5	34.5
	All Other Equipment > 5 HP	1	50%	85	11,860	37.5	34.5
	All Other Equipment > 5 HP	1	50%	85	11,890	37.5	34.5
	All Other Equipment > 5 HP	1	50%	85	11,920	37.5	34.4
	All Other Equipment > 5 HP	1	50%	85	11,950	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	11,980	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	12,010	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	12,040	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	12,070	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,100	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,130	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,160	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,190	37.3	34.2
	All Other Equipment > 5 HP	1	50%	85	12,220	37.2	34.2
	Crane	1	16%	81	12,250	32.8	24.9
	Crane	1	16%	81	12,280	32.8	24.8
	Generator	1	50%	81	12,310	32.8	29.8
	Generator	1	50%	81	12,340	32.8	29.7
	Tractor	1	40%	84	12,370	66.2	62.2
	Tractor	1	40%	84	12,400	66.2	62.2
	Tractor	1	40%	84	12,430	66.2	62.2
	Tractor	1	40%	84	12,460	66.2	62.2
	Tractor	1	40%	84	12,490	66.2	62.2
	Tractor	1	40%	84	12,520	66.2	62.2
	Tractor	1	40%	84	12,550	66.2	62.2
	Tractor	1	40%	84	12,580	66.2	62.2
	Tractor	1	40%	84	12,610	66.2	62.2
	Tractor	1	40%	84	12,640	66.2	62.2
	Tractor	1	40%	84	12,670	66.2	62.2
	Tractor	1	40%	84	12,700	66.2	62.2
	Tractor	1	40%	84	12,730	66.2	62.2
	Tractor	1	40%	84	12,760	66.2	62.2
	Tractor	1	40%	84	12,790	66.2	62.2
	Welder/Torch	1	40%	74	12,820	25.8	21.8
	Welder/Torch	1	40%	74	12,850	25.8	21.8
	Welder/Torch	1	40%	74	12,880	25.8	21.8
	Welder/Torch	1	40%	74	12,910	25.8	21.8
	Welder/Torch	1	40%	74	12,940	25.7	21.8
	Welder/Torch	1	40%	74	12,970	25.7	21.7
	Welder/Torch	1	40%	74	13,000	25.7	21.7
	Welder/Torch	1	40%	74	13,030	25.7	21.7
	Welder/Torch	1	40%	74	13,060	25.7	21.7
	Welder/Torch	1	40%	74	13,090	25.6	21.7
	Combined LEQ						**74.0**

					RECEPTOR		1
Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Paving							
	Pavement Scarafier	1	20%	90	11,800	42.0	35.1
	Pavement Scarafier	1	20%	90	11,830	42.0	35.0
	Pavement Scarafier	1	20%	90	11,860	42.0	35.0
	Pavement Scarafier	1	20%	90	11,890	42.0	35.0
	Roller	1	20%	80	11,920	32.5	25.5
	Roller	1	20%	80	11,950	32.4	25.4
	Roller	1	20%	80	11,980	32.4	25.4
	Roller	1	20%	80	12,010	32.4	25.4
	Paver	1	50%	77	12,040	29.6	26.6
	Paver	1	50%	77	12,070	29.5	26.5
	Paver	1	50%	77	12,100	29.5	26.5
	Paver	1	50%	77	12,130	29.5	26.5
	Combined LEQ						**42.0**
Architectural Coating							
	Compressor (air)	1	40%	78	11,800	30.2	26.3
	Compressor (air)	1	40%	78	11,830	30.2	26.2
	Compressor (air)	1	40%	78	11,840	30.2	26.2
	Compressor (air)	1	40%	78	11,850	30.2	26.2
	Compressor (air)	1	40%	78	11,860	30.2	26.2
	Compressor (air)	1	40%	78	11,870	30.2	26.2
	Compressor (air)	1	40%	78	11,880	30.2	26.2
	Compressor (air)	1	40%	78	11,890	30.2	26.2
	Compressor (air)	1	40%	78	11,900	30.2	26.2
	Compressor (air)	1	40%	78	11,910	30.2	26.2
	Combined LEQ						**36.2**
Combined Construction/Paving/Painting							
	Pavement Scarafier	1	20%	90	11,800	42.0	35.1
	Pavement Scarafier	1	20%	90	11,830	42.0	35.0
	Pavement Scarafier	1	20%	90	11,860	42.0	35.0
	Pavement Scarafier	1	20%	90	11,890	42.0	35.0
	All Other Equipment > 5 HP	1	50%	85	11,920	37.5	34.4
	All Other Equipment > 5 HP	1	50%	85	11,950	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	11,980	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	12,010	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	12,040	37.4	34.4
	All Other Equipment > 5 HP	1	50%	85	12,070	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,100	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,130	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,160	37.3	34.3
	All Other Equipment > 5 HP	1	50%	85	12,190	37.3	34.2
	All Other Equipment > 5 HP	1	50%	85	12,220	37.2	34.2
	All Other Equipment > 5 HP	1	50%	85	12,250	37.2	34.2
	All Other Equipment > 5 HP	1	50%	85	12,280	37.2	34.2
	All Other Equipment > 5 HP	1	50%	85	12,310	37.2	34.2
	All Other Equipment > 5 HP	1	50%	85	12,340	37.2	34.1
	Tractor	1	40%	84	12,370	36.1	32.2
	Tractor	1	40%	84	12,400	36.1	32.1
	Tractor	1	40%	84	12,430	36.1	32.1
	Tractor	1	40%	84	12,460	36.1	32.1
	Tractor	1	40%	84	12,490	36.0	32.1
	Tractor	1	40%	84	12,520	36.0	32.0
	Tractor	1	40%	84	12,550	36.0	32.0
	Tractor	1	40%	84	12,580	36.0	32.0
	Tractor	1	40%	84	12,610	36.0	32.0
	Tractor	1	40%	84	12,640	35.9	32.0
	Tractor	1	40%	84	12,670	35.9	31.9
	Tractor	1	40%	84	12,700	35.9	31.9
	Tractor	1	40%	84	12,730	35.9	31.9
	Tractor	1	40%	84	12,760	35.9	31.9
	Tractor	1	40%	84	12,790	35.8	31.9
	Generator	1	50%	81	12,820	32.4	29.4
	Generator	1	50%	81	12,850	32.4	29.4
	Roller	1	20%	80	12,880	31.8	24.8
	Roller	1	20%	80	12,910	31.8	24.8
	Roller	1	20%	80	12,940	31.7	24.8
	Roller	1	20%	80	12,970	31.7	24.7
	Compressor (air)	1	40%	78	13,000	29.4	25.4
	Compressor (air)	1	40%	78	13,030	29.4	25.4
	Compressor (air)	1	40%	78	13,060	29.4	25.4
	Compressor (air)	1	40%	78	13,090	29.3	25.4
	Compressor (air)	1	40%	78	13,120	29.3	25.3
	Compressor (air)	1	40%	78	13,150	29.3	25.3
	Compressor (air)	1	40%	78	13,180	29.3	25.3
	Compressor (air)	1	40%	78	13,210	29.3	25.3
	Compressor (air)	1	40%	78	13,240	29.2	25.3
	Compressor (air)	1	40%	78	13,270	29.2	25.2
	Paver	1	50%	77	13,300	28.7	25.7
	Paver	1	50%	77	13,330	28.7	25.7
	Paver	1	50%	77	13,360	28.7	25.7
	Paver	1	50%	77	13,390	28.6	25.6
	Welder/Torch	1	40%	74	13,420	25.4	21.4
	Welder/Torch	1	40%	74	13,450	25.4	21.4
	Welder/Torch	1	40%	74	13,480	25.4	21.4
	Welder/Torch	1	40%	74	13,510	25.4	21.4
	Welder/Torch	1	40%	74	13,540	25.3	21.4
	Welder/Torch	1	40%	74	13,570	25.3	21.3
	Welder/Torch	1	40%	74	13,600	25.3	21.3
	Welder/Torch	1	40%	74	13,630	25.3	21.3
	Welder/Torch	1	40%	74	13,660	25.3	21.3
	Welder/Torch	1	40%	74	13,690	25.3	21.3
Combined LEQ							**49.0**

Project: **KPC Coachella Phase 2**
Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

	Receptor (Land Use)	Average Distance (feet)	Distance to Receptor (feet)	Shielding	Direction
1	Phase 1 Residential	15,000	480	0	SE

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Site Preparation							
	Tractor	1	40%	84	480	64.4	60.4
	Tractor	1	40%	84	520	63.7	59.7
	Tractor	1	40%	84	560	63.0	59.0
	Tractor	1	40%	84	600	62.4	58.4
	Tractor	1	40%	84	640	61.9	57.9
	Tractor	1	40%	84	680	61.3	57.3
	Tractor	1	40%	84	720	60.8	56.9
	Tractor	1	40%	84	760	60.4	56.4
	Dozer	1	40%	82	800	57.6	53.6
	Dozer	1	40%	82	840	57.2	53.2
	Dozer	1	40%	82	880	56.8	52.8
	Dozer	1	40%	82	920	56.4	52.4
	Dozer	1	40%	82	960	56.0	52.1
	Dozer	1	40%	82	1,000	55.7	51.7
	Combined LEQ						**68.3**
Grading							
	Grader	1	40%	85	480	65.4	61.4
	Grader	1	40%	85	510	64.8	60.8
	Excavator	1	40%	81	540	60.0	56.1
	Excavator	1	40%	81	570	59.6	55.6
	Dozer	1	40%	82	600	60.1	56.1
	Dozer	1	40%	82	630	59.7	55.7
	Scraper	1	40%	84	660	61.2	57.2
	Scraper	1	40%	84	690	60.8	56.8
	Scraper	1	40%	84	720	60.4	56.5
	Scraper	1	40%	84	750	60.1	56.1
	Tractor	1	40%	84	780	60.1	56.2
	Tractor	1	40%	84	810	59.8	55.8
	Tractor	1	40%	84	840	59.5	55.5
	Tractor	1	40%	84	870	59.2	55.2
	Combined LEQ						**68.7**
Building Construction							
	All Other Equipment > 5 HP	1	50%	85	480	65.4	62.3
	All Other Equipment > 5 HP	1	50%	85	510	64.8	61.8
	All Other Equipment > 5 HP	1	50%	85	540	64.3	61.3
	All Other Equipment > 5 HP	1	50%	85	570	63.9	60.9
	All Other Equipment > 5 HP	1	50%	85	600	63.4	60.4
	All Other Equipment > 5 HP	1	50%	85	630	63.0	60.0
	All Other Equipment > 5 HP	1	50%	85	660	62.6	59.6
	All Other Equipment > 5 HP	1	50%	85	690	62.2	59.2
	All Other Equipment > 5 HP	1	50%	85	720	61.8	58.8
	All Other Equipment > 5 HP	1	50%	85	750	61.5	58.5
	All Other Equipment > 5 HP	1	50%	85	780	61.1	58.1
	All Other Equipment > 5 HP	1	50%	85	810	60.8	57.8
	All Other Equipment > 5 HP	1	50%	85	840	60.5	57.5
	All Other Equipment > 5 HP	1	50%	85	870	60.2	57.2
	All Other Equipment > 5 HP	1	50%	85	900	59.9	56.9
	Crane	1	16%	81	930	55.2	47.3
	Crane	1	16%	81	960	54.9	47.0
	Generator	1	50%	81	990	54.7	51.7
	Generator	1	50%	81	1,020	54.4	51.4
	Tractor	1	40%	84	1,050	66.2	62.2
	Tractor	1	40%	84	1,080	66.2	62.2
	Tractor	1	40%	84	1,110	66.2	62.2
	Tractor	1	40%	84	1,140	66.2	62.2
	Tractor	1	40%	84	1,170	66.2	62.2
	Tractor	1	40%	84	1,200	66.2	62.2
	Tractor	1	40%	84	1,230	66.2	62.2
	Tractor	1	40%	84	1,260	66.2	62.2
	Tractor	1	40%	84	1,290	66.2	62.2
	Tractor	1	40%	84	1,320	66.2	62.2
	Tractor	1	40%	84	1,350	66.2	62.2
	Tractor	1	40%	84	1,380	66.2	62.2
	Tractor	1	40%	84	1,410	66.2	62.2
	Tractor	1	40%	84	1,440	66.2	62.2
	Tractor	1	40%	84	1,470	66.2	62.2
	Welder/Torch	1	40%	74	1,500	44.5	40.5
	Welder/Torch	1	40%	74	1,530	44.3	40.3
	Welder/Torch	1	40%	74	1,560	44.1	40.1
	Welder/Torch	1	40%	74	1,590	44.0	40.0
	Welder/Torch	1	40%	74	1,620	43.8	39.8
	Welder/Torch	1	40%	74	1,650	43.6	39.7
	Welder/Torch	1	40%	74	1,680	43.5	39.5
	Welder/Torch	1	40%	74	1,710	43.3	39.3
	Welder/Torch	1	40%	74	1,740	43.2	39.2
	Welder/Torch	1	40%	74	1,770	43.0	39.0
	Combined LEQ						**76.0**

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	Distance (feet)	RECEPTOR 1 Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Paving							
	Pavement Scarafier	1	20%	90	480	69.9	62.9
	Pavement Scarafier	1	20%	90	510	69.3	62.3
	Pavement Scarafier	1	20%	90	540	68.8	61.8
	Pavement Scarafier	1	20%	90	570	68.4	61.4
	Roller	1	20%	80	600	58.4	51.4
	Roller	1	20%	80	630	58.0	51.0
	Roller	1	20%	80	660	57.6	50.6
	Roller	1	20%	80	690	57.2	50.2
	Paver	1	50%	77	720	54.0	51.0
	Paver	1	50%	77	750	53.7	50.7
	Paver	1	50%	77	780	53.3	50.3
	Paver	1	50%	77	810	53.0	50.0
	Combined LEQ						**68.7**
Architectural Coating							
	Compressor (air)	1	40%	78	480	58.1	54.1
	Compressor (air)	1	40%	78	510	57.5	53.5
	Compressor (air)	1	40%	78	540	57.0	53.1
	Compressor (air)	1	40%	78	570	56.6	52.6
	Compressor (air)	1	40%	78	600	56.1	52.1
	Compressor (air)	1	40%	78	630	55.7	51.7
	Compressor (air)	1	40%	78	660	55.3	51.3
	Compressor (air)	1	40%	78	690	54.9	50.9
	Compressor (air)	1	40%	78	720	54.5	50.6
	Compressor (air)	1	40%	78	750	54.2	50.2
	Combined LEQ						**62.2**
Combined Construction/Paving/Painting							
	Pavement Scarafier	1	20%	90	480	69.9	62.9
	Pavement Scarafier	1	20%	90	510	69.3	62.3
	Pavement Scarafier	1	20%	90	540	68.8	61.8
	Pavement Scarafier	1	20%	90	570	68.4	61.4
	All Other Equipment > 5 HP	1	50%	85	600	63.4	60.4
	All Other Equipment > 5 HP	1	50%	85	630	63.0	60.0
	All Other Equipment > 5 HP	1	50%	85	660	62.6	59.6
	All Other Equipment > 5 HP	1	50%	85	690	62.2	59.2
	All Other Equipment > 5 HP	1	50%	85	720	61.8	58.8
	All Other Equipment > 5 HP	1	50%	85	750	61.5	58.5
	All Other Equipment > 5 HP	1	50%	85	780	61.1	58.1
	All Other Equipment > 5 HP	1	50%	85	810	60.8	57.8
	All Other Equipment > 5 HP	1	50%	85	840	60.5	57.5
	All Other Equipment > 5 HP	1	50%	85	870	60.2	57.2
	All Other Equipment > 5 HP	1	50%	85	900	59.9	56.9
	All Other Equipment > 5 HP	1	50%	85	930	59.6	56.6
	All Other Equipment > 5 HP	1	50%	85	960	59.3	56.3
	All Other Equipment > 5 HP	1	50%	85	990	59.1	56.1
	All Other Equipment > 5 HP	1	50%	85	1,020	58.8	55.8
	Tractor	1	40%	84	1,050	57.6	53.6
	Tractor	1	40%	84	1,080	57.3	53.3
	Tractor	1	40%	84	1,110	57.1	53.1
	Tractor	1	40%	84	1,140	56.8	52.9
	Tractor	1	40%	84	1,170	56.6	52.6
	Tractor	1	40%	84	1,200	56.4	52.4
	Tractor	1	40%	84	1,230	56.2	52.2
	Tractor	1	40%	84	1,260	56.0	52.0
	Tractor	1	40%	84	1,290	55.8	51.8
	Tractor	1	40%	84	1,320	55.6	51.6
	Tractor	1	40%	84	1,350	55.4	51.4
	Tractor	1	40%	84	1,380	55.2	51.2
	Tractor	1	40%	84	1,410	55.0	51.0
	Tractor	1	40%	84	1,440	54.8	50.8
	Tractor	1	40%	84	1,470	54.6	50.7
	Generator	1	50%	81	1,500	51.1	48.0
	Generator	1	50%	81	1,530	50.9	47.9
	Roller	1	20%	80	1,560	50.1	43.1
	Roller	1	20%	80	1,590	50.0	43.0
	Roller	1	20%	80	1,620	49.8	42.8
	Roller	1	20%	80	1,650	49.6	42.6
	Compressor (air)	1	40%	78	1,680	47.2	43.2
	Compressor (air)	1	40%	78	1,710	47.0	43.0
	Compressor (air)	1	40%	78	1,740	46.9	42.9
	Compressor (air)	1	40%	78	1,770	46.7	42.7
	Compressor (air)	1	40%	78	1,800	46.6	42.6
	Compressor (air)	1	40%	78	1,830	46.4	42.5
	Compressor (air)	1	40%	78	1,860	46.3	42.3
	Compressor (air)	1	40%	78	1,890	46.2	42.2
	Compressor (air)	1	40%	78	1,920	46.0	42.0
	Compressor (air)	1	40%	78	1,950	45.9	41.9
	Paver	1	50%	77	1,980	45.2	42.2
	Paver	1	50%	77	2,010	45.1	42.1
	Paver	1	50%	77	2,040	45.0	42.0
	Paver	1	50%	77	2,070	44.9	41.8
	Welder/Torch	1	40%	74	2,100	41.5	37.6
	Welder/Torch	1	40%	74	2,130	41.4	37.4
	Welder/Torch	1	40%	74	2,160	41.3	37.3
	Welder/Torch	1	40%	74	2,190	41.2	37.2
	Welder/Torch	1	40%	74	2,220	41.1	37.1
	Welder/Torch	1	40%	74	2,250	40.9	37.0
	Welder/Torch	1	40%	74	2,280	40.8	36.8
	Welder/Torch	1	40%	74	2,310	40.7	36.7
	Welder/Torch	1	40%	74	2,340	40.6	36.6
	Welder/Torch	1	40%	74	2,370	40.5	36.5
Combined LEQ							**71.9**

Project: **KPC Coachella Phase 3**

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

	Receptor (Land Use)	Average Distance (feet)	Distance to Receptor (feet)	Shielding	Direction
1	Phase 2 Residential	2,800	430	0	E

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Site Preparation							
	Tractor	1	40%	84	430	65.3	61.3
	Tractor	1	40%	84	460	64.7	60.7
	Tractor	1	40%	84	490	64.2	60.2
	Tractor	1	40%	84	520	63.7	59.7
	Tractor	1	40%	84	550	63.2	59.2
	Tractor	1	40%	84	580	62.7	58.7
	Tractor	1	40%	84	610	62.3	58.3
	Tractor	1	40%	84	640	61.9	57.9
	Dozer	1	40%	82	670	59.2	55.2
	Dozer	1	40%	82	700	58.8	54.8
	Dozer	1	40%	82	730	58.4	54.4
	Dozer	1	40%	82	760	58.1	54.1
	Dozer	1	40%	82	790	57.7	53.7
	Dozer	1	40%	82	820	57.4	53.4
	Combined LEQ						**69.5**
Grading							
	Grader	1	40%	85	430	66.3	62.3
	Grader	1	40%	85	460	65.7	61.7
	Excavator	1	40%	81	490	60.9	56.9
	Excavator	1	40%	81	520	60.4	56.4
	Dozer	1	40%	82	550	60.9	56.9
	Dozer	1	40%	82	580	60.4	56.4
	Scraper	1	40%	84	610	61.9	57.9
	Scraper	1	40%	84	640	61.5	57.5
	Scraper	1	40%	84	670	61.1	57.1
	Scraper	1	40%	84	700	60.7	56.7
	Tractor	1	40%	84	730	60.7	56.7
	Tractor	1	40%	84	760	60.4	56.4
	Tractor	1	40%	84	790	60.0	56.0
	Tractor	1	40%	84	820	59.7	55.7
	Combined LEQ						**69.5**
Building Construction							
	All Other Equipment > 5 HP	1	50%	85	430	66.3	63.3
	All Other Equipment > 5 HP	1	50%	85	460	65.7	62.7
	All Other Equipment > 5 HP	1	50%	85	490	65.2	62.2
	All Other Equipment > 5 HP	1	50%	85	520	64.7	61.6
	All Other Equipment > 5 HP	1	50%	85	550	64.2	61.2
	All Other Equipment > 5 HP	1	50%	85	580	63.7	60.7
	All Other Equipment > 5 HP	1	50%	85	610	63.3	60.3
	All Other Equipment > 5 HP	1	50%	85	640	62.9	59.8
	All Other Equipment > 5 HP	1	50%	85	670	62.5	59.4
	All Other Equipment > 5 HP	1	50%	85	700	62.1	59.1
	All Other Equipment > 5 HP	1	50%	85	730	61.7	58.7
	All Other Equipment > 5 HP	1	50%	85	760	61.4	58.4
	All Other Equipment > 5 HP	1	50%	85	790	61.0	58.0
	All Other Equipment > 5 HP	1	50%	85	820	60.7	57.7
	All Other Equipment > 5 HP	1	50%	85	850	60.4	57.4
	Crane	1	16%	81	880	55.7	47.7
	Crane	1	16%	81	910	55.4	47.4
	Generator	1	50%	81	940	55.1	52.1
	Generator	1	50%	81	970	54.8	51.8
	Tractor	1	40%	84	1,000	66.2	62.2
	Tractor	1	40%	84	1,030	66.2	62.2
	Tractor	1	40%	84	1,060	66.2	62.2
	Tractor	1	40%	84	1,090	66.2	62.2
	Tractor	1	40%	84	1,120	66.2	62.2
	Tractor	1	40%	84	1,150	66.2	62.2
	Tractor	1	40%	84	1,180	66.2	62.2
	Tractor	1	40%	84	1,210	66.2	62.2
	Tractor	1	40%	84	1,240	66.2	62.2
	Tractor	1	40%	84	1,270	66.2	62.2
	Tractor	1	40%	84	1,300	66.2	62.2
	Tractor	1	40%	84	1,330	66.2	62.2
	Tractor	1	40%	84	1,360	66.2	62.2
	Tractor	1	40%	84	1,390	66.2	62.2
	Tractor	1	40%	84	1,420	66.2	62.2
	Welder/Torch	1	40%	74	1,450	44.8	40.8
	Welder/Torch	1	40%	74	1,480	44.6	40.6
	Welder/Torch	1	40%	74	1,510	44.4	40.4
	Welder/Torch	1	40%	74	1,540	44.2	40.2
	Welder/Torch	1	40%	74	1,570	44.1	40.1
	Welder/Torch	1	40%	74	1,600	43.9	39.9
	Welder/Torch	1	40%	74	1,630	43.7	39.8
	Welder/Torch	1	40%	74	1,660	43.6	39.6
	Welder/Torch	1	40%	74	1,690	43.4	39.4
	Welder/Torch	1	40%	74	1,720	43.3	39.3
	Combined LEQ						**76.2**

					RECEPTOR		1
Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Paving							
	Pavement Scarafier	1	20%	90	430	70.8	63.8
	Pavement Scarafier	1	20%	90	460	70.2	63.2
	Pavement Scarafier	1	20%	90	490	69.7	62.7
	Pavement Scarafier	1	20%	90	520	69.2	62.2
	Roller	1	20%	80	550	59.2	52.2
	Roller	1	20%	80	580	58.7	51.7
	Roller	1	20%	80	610	58.3	51.3
	Roller	1	20%	80	640	57.9	50.9
	Paver	1	50%	77	670	54.7	51.6
	Paver	1	50%	77	700	54.3	51.3
	Paver	1	50%	77	730	53.9	50.9
	Paver	1	50%	77	760	53.6	50.6
	Combined LEQ						**69.6**
Architectural Coating							
	Compressor (air)	1	40%	78	430	59.0	55.0
	Compressor (air)	1	40%	78	460	58.4	54.4
	Compressor (air)	1	40%	78	490	57.9	53.9
	Compressor (air)	1	40%	78	520	57.4	53.4
	Compressor (air)	1	40%	78	550	56.9	52.9
	Compressor (air)	1	40%	78	580	56.4	52.4
	Compressor (air)	1	40%	78	610	56.0	52.0
	Compressor (air)	1	40%	78	640	55.6	51.6
	Compressor (air)	1	40%	78	670	55.2	51.2
	Compressor (air)	1	40%	78	700	54.8	50.8
	Combined LEQ						**63.0**
Combined Construction/Paving/Painting							
	Pavement Scarafier	1	20%	90	430	70.8	63.8
	Pavement Scarafier	1	20%	90	460	70.2	63.2
	Pavement Scarafier	1	20%	90	490	69.7	62.7
	Pavement Scarafier	1	20%	90	520	69.2	62.2
	All Other Equipment > 5 HP	1	50%	85	550	64.2	61.2
	All Other Equipment > 5 HP	1	50%	85	580	63.7	60.7
	All Other Equipment > 5 HP	1	50%	85	610	63.3	60.3
	All Other Equipment > 5 HP	1	50%	85	640	62.9	59.8
	All Other Equipment > 5 HP	1	50%	85	670	62.5	59.4
	All Other Equipment > 5 HP	1	50%	85	700	62.1	59.1
	All Other Equipment > 5 HP	1	50%	85	730	61.7	58.7
	All Other Equipment > 5 HP	1	50%	85	760	61.4	58.4
	All Other Equipment > 5 HP	1	50%	85	790	61.0	58.0
	All Other Equipment > 5 HP	1	50%	85	820	60.7	57.7
	All Other Equipment > 5 HP	1	50%	85	850	60.4	57.4
	All Other Equipment > 5 HP	1	50%	85	880	60.1	57.1
	All Other Equipment > 5 HP	1	50%	85	910	59.8	56.8
	All Other Equipment > 5 HP	1	50%	85	940	59.5	56.5
	All Other Equipment > 5 HP	1	50%	85	970	59.2	56.2
	Tractor	1	40%	84	1,000	58.0	54.0
	Tractor	1	40%	84	1,030	57.7	53.7
	Tractor	1	40%	84	1,060	57.5	53.5
	Tractor	1	40%	84	1,090	57.2	53.3
	Tractor	1	40%	84	1,120	57.0	53.0
	Tractor	1	40%	84	1,150	56.8	52.8
	Tractor	1	40%	84	1,180	56.5	52.6
	Tractor	1	40%	84	1,210	56.3	52.3
	Tractor	1	40%	84	1,240	56.1	52.1
	Tractor	1	40%	84	1,270	55.9	51.9
	Tractor	1	40%	84	1,300	55.7	51.7
	Tractor	1	40%	84	1,330	55.5	51.5
	Tractor	1	40%	84	1,360	55.3	51.3
	Tractor	1	40%	84	1,390	55.1	51.1
	Tractor	1	40%	84	1,420	54.9	51.0
	Generator	1	50%	81	1,450	51.4	48.3
	Generator	1	50%	81	1,480	51.2	48.2
	Roller	1	20%	80	1,510	50.4	43.4
	Roller	1	20%	80	1,540	50.2	43.2
	Roller	1	20%	80	1,570	50.1	43.1
	Roller	1	20%	80	1,600	49.9	42.9
	Compressor (air)	1	40%	78	1,630	47.4	43.5
	Compressor (air)	1	40%	78	1,660	47.3	43.3
	Compressor (air)	1	40%	78	1,690	47.1	43.1
	Compressor (air)	1	40%	78	1,720	47.0	43.0
	Compressor (air)	1	40%	78	1,750	46.8	42.8
	Compressor (air)	1	40%	78	1,780	46.7	42.7
	Compressor (air)	1	40%	78	1,810	46.5	42.5
	Compressor (air)	1	40%	78	1,840	46.4	42.4
	Compressor (air)	1	40%	78	1,870	46.2	42.3
	Compressor (air)	1	40%	78	1,900	46.1	42.1
	Paver	1	50%	77	1,930	45.5	42.5
	Paver	1	50%	77	1,960	45.3	42.3
	Paver	1	50%	77	1,990	45.2	42.2
	Paver	1	50%	77	2,020	45.1	42.1
	Welder/Torch	1	40%	74	2,050	41.7	37.8
	Welder/Torch	1	40%	74	2,080	41.6	37.6
	Welder/Torch	1	40%	74	2,110	41.5	37.5
	Welder/Torch	1	40%	74	2,140	41.4	37.4
	Welder/Torch	1	40%	74	2,170	41.3	37.3
	Welder/Torch	1	40%	74	2,200	41.1	37.2
	Welder/Torch	1	40%	74	2,230	41.0	37.0
	Welder/Torch	1	40%	74	2,260	40.9	36.9
	Welder/Torch	1	40%	74	2,290	40.8	36.8
	Welder/Torch	1	40%	74	2,320	40.7	36.7
Combined LEQ							**72.5**

Project: KPC Coachella Phase 4

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

	Receptor (Land Use)	Average Distance (feet)	Distance to Receptor (feet)	Shielding	Direction
1	Phase 1 Residential	1,900	165	0	W

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Site Preparation							
	Tractor	1	40%	84	165	73.6	69.7
	Tractor	1	40%	84	195	72.2	68.2
	Tractor	1	40%	84	225	70.9	67.0
	Tractor	1	40%	84	255	69.8	65.9
	Tractor	1	40%	84	285	68.9	64.9
	Tractor	1	40%	84	315	68.0	64.0
	Tractor	1	40%	84	345	67.2	63.2
	Tractor	1	40%	84	375	66.5	62.5
	Dozer	1	40%	82	405	63.5	59.6
	Dozer	1	40%	82	435	62.9	58.9
	Dozer	1	40%	82	465	62.3	58.4
	Dozer	1	40%	82	495	61.8	57.8
	Dozer	1	40%	82	525	61.3	57.3
	Dozer	1	40%	82	555	60.8	56.8
	Combined LEQ						**75.8**
Grading							
	Grader	1	40%	85	165	74.6	70.7
	Grader	1	40%	85	195	73.2	69.2
	Excavator	1	40%	81	225	67.6	63.7
	Excavator	1	40%	81	255	66.5	62.6
	Dozer	1	40%	82	285	66.6	62.6
	Dozer	1	40%	82	315	65.7	61.7
	Scraper	1	40%	84	345	66.8	62.8
	Scraper	1	40%	84	375	66.1	62.1
	Scraper	1	40%	84	405	65.4	61.5
	Scraper	1	40%	84	435	64.8	60.8
	Tractor	1	40%	84	465	64.6	60.7
	Tractor	1	40%	84	495	64.1	60.1
	Tractor	1	40%	84	525	63.6	59.6
	Tractor	1	40%	84	555	63.1	59.1
	Combined LEQ						**75.7**
Building Construction							
	All Other Equipment > 5 HP	1	50%	85	165	74.6	71.6
	All Other Equipment > 5 HP	1	50%	85	195	73.2	70.2
	All Other Equipment > 5 HP	1	50%	85	225	71.9	68.9
	All Other Equipment > 5 HP	1	50%	85	255	70.8	67.8
	All Other Equipment > 5 HP	1	50%	85	285	69.9	66.9
	All Other Equipment > 5 HP	1	50%	85	315	69.0	66.0
	All Other Equipment > 5 HP	1	50%	85	345	68.2	65.2
	All Other Equipment > 5 HP	1	50%	85	375	67.5	64.5
	All Other Equipment > 5 HP	1	50%	85	405	66.8	63.8
	All Other Equipment > 5 HP	1	50%	85	435	66.2	63.2
	All Other Equipment > 5 HP	1	50%	85	465	65.6	62.6
	All Other Equipment > 5 HP	1	50%	85	495	65.1	62.1
	All Other Equipment > 5 HP	1	50%	85	525	64.6	61.6
	All Other Equipment > 5 HP	1	50%	85	555	64.1	61.1
	All Other Equipment > 5 HP	1	50%	85	585	63.6	60.6
	Crane	1	16%	81	615	58.8	50.8
	Crane	1	16%	81	645	58.4	50.4
	Generator	1	50%	81	675	58.0	55.0
	Generator	1	50%	81	705	57.6	54.6
	Tractor	1	40%	84	735	66.2	62.2
	Tractor	1	40%	84	765	66.2	62.2
	Tractor	1	40%	84	795	66.2	62.2
	Tractor	1	40%	84	825	66.2	62.2
	Tractor	1	40%	84	855	66.2	62.2
	Tractor	1	40%	84	885	66.2	62.2
	Tractor	1	40%	84	915	66.2	62.2
	Tractor	1	40%	84	945	66.2	62.2
	Tractor	1	40%	84	975	66.2	62.2
	Tractor	1	40%	84	1,005	66.2	62.2
	Tractor	1	40%	84	1,035	66.2	62.2
	Tractor	1	40%	84	1,065	66.2	62.2
	Tractor	1	40%	84	1,095	66.2	62.2
	Tractor	1	40%	84	1,125	66.2	62.2
	Tractor	1	40%	84	1,155	66.2	62.2
	Welder/Torch	1	40%	74	1,185	46.5	42.5
	Welder/Torch	1	40%	74	1,215	46.3	42.3
	Welder/Torch	1	40%	74	1,245	46.1	42.1
	Welder/Torch	1	40%	74	1,275	45.9	41.9
	Welder/Torch	1	40%	74	1,305	45.7	41.7
	Welder/Torch	1	40%	74	1,335	45.5	41.5
	Welder/Torch	1	40%	74	1,365	45.3	41.3
	Welder/Torch	1	40%	74	1,395	45.1	41.1
	Welder/Torch	1	40%	74	1,425	44.9	40.9
	Welder/Torch	1	40%	74	1,455	44.7	40.7
	Combined LEQ						**79.6**

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Paving							
	Pavement Scarafier	1	20%	90	165	79.1	72.1
	Pavement Scarafier	1	20%	90	195	77.7	70.7
	Pavement Scarafier	1	20%	90	225	76.4	69.4
	Pavement Scarafier	1	20%	90	255	75.3	68.4
	Roller	1	20%	80	285	64.9	57.9
	Roller	1	20%	80	315	64.0	57.0
	Roller	1	20%	80	345	63.2	56.2
	Roller	1	20%	80	375	62.5	55.5
	Paver	1	50%	77	405	59.0	56.0
	Paver	1	50%	77	435	58.4	55.4
	Paver	1	50%	77	465	57.8	54.8
	Paver	1	50%	77	495	57.3	54.3
	Combined LEQ						**76.7**
Architectural Coating							
	Compressor (air)	1	40%	78	165	67.3	63.4
	Compressor (air)	1	40%	78	195	65.9	61.9
	Compressor (air)	1	40%	78	225	64.6	60.7
	Compressor (air)	1	40%	78	255	63.5	59.6
	Compressor (air)	1	40%	78	285	62.6	58.6
	Compressor (air)	1	40%	78	315	61.7	57.7
	Compressor (air)	1	40%	78	345	60.9	56.9
	Compressor (air)	1	40%	78	375	60.2	56.2
	Compressor (air)	1	40%	78	405	59.5	55.6
	Compressor (air)	1	40%	78	435	58.9	54.9
	Combined LEQ						**69.4**
Combined Construction/Paving/Painting							
	Pavement Scarafier	1	20%	90	165	79.1	72.1
	Pavement Scarafier	1	20%	90	195	77.7	70.7
	Pavement Scarafier	1	20%	90	225	76.4	69.4
	Pavement Scarafier	1	20%	90	255	75.3	68.4
	All Other Equipment > 5 HP	1	50%	85	285	69.9	66.9
	All Other Equipment > 5 HP	1	50%	85	315	69.0	66.0
	All Other Equipment > 5 HP	1	50%	85	345	68.2	65.2
	All Other Equipment > 5 HP	1	50%	85	375	67.5	64.5
	All Other Equipment > 5 HP	1	50%	85	405	66.8	63.8
	All Other Equipment > 5 HP	1	50%	85	435	66.2	63.2
	All Other Equipment > 5 HP	1	50%	85	465	65.6	62.6
	All Other Equipment > 5 HP	1	50%	85	495	65.1	62.1
	All Other Equipment > 5 HP	1	50%	85	525	64.6	61.6
	All Other Equipment > 5 HP	1	50%	85	555	64.1	61.1
	All Other Equipment > 5 HP	1	50%	85	585	63.6	60.6
	All Other Equipment > 5 HP	1	50%	85	615	63.2	60.2
	All Other Equipment > 5 HP	1	50%	85	645	62.8	59.8
	All Other Equipment > 5 HP	1	50%	85	675	62.4	59.4
	All Other Equipment > 5 HP	1	50%	85	705	62.0	59.0
	Tractor	1	40%	84	735	60.7	56.7
	Tractor	1	40%	84	765	60.3	56.3
	Tractor	1	40%	84	795	60.0	56.0
	Tractor	1	40%	84	825	59.7	55.7
	Tractor	1	40%	84	855	59.3	55.4
	Tractor	1	40%	84	885	59.0	55.1
	Tractor	1	40%	84	915	58.8	54.8
	Tractor	1	40%	84	945	58.5	54.5
	Tractor	1	40%	84	975	58.2	54.2
	Tractor	1	40%	84	1,005	57.9	54.0
	Tractor	1	40%	84	1,035	57.7	53.7
	Tractor	1	40%	84	1,065	57.4	53.5
	Tractor	1	40%	84	1,095	57.2	53.2
	Tractor	1	40%	84	1,125	57.0	53.0
	Tractor	1	40%	84	1,155	56.7	52.7
	Generator	1	50%	81	1,185	53.1	50.1
	Generator	1	50%	81	1,215	52.9	49.9
	Roller	1	20%	80	1,245	52.1	45.1
	Roller	1	20%	80	1,275	51.9	44.9
	Roller	1	20%	80	1,305	51.7	44.7
	Roller	1	20%	80	1,335	51.5	44.5
	Compressor (air)	1	40%	78	1,365	49.0	45.0
	Compressor (air)	1	40%	78	1,395	48.8	44.8
	Compressor (air)	1	40%	78	1,425	48.6	44.6
	Compressor (air)	1	40%	78	1,455	48.4	44.4
	Compressor (air)	1	40%	78	1,485	48.2	44.3
	Compressor (air)	1	40%	78	1,515	48.1	44.1
	Compressor (air)	1	40%	78	1,545	47.9	43.9
	Compressor (air)	1	40%	78	1,575	47.7	43.8
	Compressor (air)	1	40%	78	1,605	47.6	43.6
	Compressor (air)	1	40%	78	1,635	47.4	43.4
	Paver	1	50%	77	1,665	46.8	43.7
	Paver	1	50%	77	1,695	46.6	43.6
	Paver	1	50%	77	1,725	46.4	43.4
	Paver	1	50%	77	1,755	46.3	43.3
	Welder/Torch	1	40%	74	1,785	42.9	39.0
	Welder/Torch	1	40%	74	1,815	42.8	38.8
	Welder/Torch	1	40%	74	1,845	42.7	38.7
	Welder/Torch	1	40%	74	1,875	42.5	38.5
	Welder/Torch	1	40%	74	1,905	42.4	38.4
	Welder/Torch	1	40%	74	1,935	42.2	38.3
	Welder/Torch	1	40%	74	1,965	42.1	38.1
	Welder/Torch	1	40%	74	1,995	42.0	38.0
	Welder/Torch	1	40%	74	2,025	41.9	37.9
	Welder/Torch	1	40%	74	2,055	41.7	37.7
Combined LEQ							**77.1**

Project: **KPC Coachella Phase 5**

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

	Receptor (Land Use)	Average Distance (feet)	Distance to Receptor (feet)	Shielding	Direction
1	Phase 2 Residential	2,200	425	0	W

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Site Preparation							
	Tractor	1	40%	84	425	65.4	61.4
	Tractor	1	40%	84	455	64.8	60.8
	Tractor	1	40%	84	485	64.3	60.3
	Tractor	1	40%	84	515	63.7	59.8
	Tractor	1	40%	84	545	63.3	59.3
	Tractor	1	40%	84	575	62.8	58.8
	Tractor	1	40%	84	605	62.3	58.4
	Tractor	1	40%	84	635	61.9	57.9
	Dozer	1	40%	82	665	59.2	55.2
	Dozer	1	40%	82	695	58.8	54.9
	Dozer	1	40%	82	725	58.5	54.5
	Dozer	1	40%	82	755	58.1	54.1
	Dozer	1	40%	82	785	57.8	53.8
	Dozer	1	40%	82	815	57.5	53.5
	Combined LEQ						**69.6**
Grading							
	Grader	1	40%	85	425	66.4	62.4
	Grader	1	40%	85	455	65.8	61.8
	Excavator	1	40%	81	485	61.0	57.0
	Excavator	1	40%	81	515	60.4	56.5
	Dozer	1	40%	82	545	61.0	57.0
	Dozer	1	40%	82	575	60.5	56.5
	Scraper	1	40%	84	605	61.9	58.0
	Scraper	1	40%	84	635	61.5	57.5
	Scraper	1	40%	84	665	61.1	57.1
	Scraper	1	40%	84	695	60.7	56.8
	Tractor	1	40%	84	725	60.8	56.8
	Tractor	1	40%	84	755	60.4	56.4
	Tractor	1	40%	84	785	60.1	56.1
	Tractor	1	40%	84	815	59.8	55.8
	Combined LEQ						**69.6**
Building Construction							
	All Other Equipment > 5 HP	1	50%	85	425	66.4	63.4
	All Other Equipment > 5 HP	1	50%	85	455	65.8	62.8
	All Other Equipment > 5 HP	1	50%	85	485	65.3	62.3
	All Other Equipment > 5 HP	1	50%	85	515	64.7	61.7
	All Other Equipment > 5 HP	1	50%	85	545	64.3	61.2
	All Other Equipment > 5 HP	1	50%	85	575	63.8	60.8
	All Other Equipment > 5 HP	1	50%	85	605	63.3	60.3
	All Other Equipment > 5 HP	1	50%	85	635	62.9	59.9
	All Other Equipment > 5 HP	1	50%	85	665	62.5	59.5
	All Other Equipment > 5 HP	1	50%	85	695	62.1	59.1
	All Other Equipment > 5 HP	1	50%	85	725	61.8	58.8
	All Other Equipment > 5 HP	1	50%	85	755	61.4	58.4
	All Other Equipment > 5 HP	1	50%	85	785	61.1	58.1
	All Other Equipment > 5 HP	1	50%	85	815	60.8	57.7
	All Other Equipment > 5 HP	1	50%	85	845	60.4	57.4
	Crane	1	16%	81	875	55.7	47.8
	Crane	1	16%	81	905	55.4	47.5
	Generator	1	50%	81	935	55.2	52.2
	Generator	1	50%	81	965	54.9	51.9
	Tractor	1	40%	84	995	66.2	62.2
	Tractor	1	40%	84	1,025	66.2	62.2
	Tractor	1	40%	84	1,055	66.2	62.2
	Tractor	1	40%	84	1,085	66.2	62.2
	Tractor	1	40%	84	1,115	66.2	62.2
	Tractor	1	40%	84	1,145	66.2	62.2
	Tractor	1	40%	84	1,175	66.2	62.2
	Tractor	1	40%	84	1,205	66.2	62.2
	Tractor	1	40%	84	1,235	66.2	62.2
	Tractor	1	40%	84	1,265	66.2	62.2
	Tractor	1	40%	84	1,295	66.2	62.2
	Tractor	1	40%	84	1,325	66.2	62.2
	Tractor	1	40%	84	1,355	66.2	62.2
	Tractor	1	40%	84	1,385	66.2	62.2
	Tractor	1	40%	84	1,415	66.2	62.2
	Welder/Torch	1	40%	74	1,445	44.8	40.8
	Welder/Torch	1	40%	74	1,475	44.6	40.6
	Welder/Torch	1	40%	74	1,505	44.4	40.4
	Welder/Torch	1	40%	74	1,535	44.3	40.3
	Welder/Torch	1	40%	74	1,565	44.1	40.1
	Welder/Torch	1	40%	74	1,595	43.9	39.9
	Welder/Torch	1	40%	74	1,625	43.8	39.8
	Welder/Torch	1	40%	74	1,655	43.6	39.6
	Welder/Torch	1	40%	74	1,685	43.4	39.5
	Welder/Torch	1	40%	74	1,715	43.3	39.3
	Combined LEQ						**76.3**

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Paving							
	Pavement Scarafier	1	20%	90	425	70.9	63.9
	Pavement Scarafier	1	20%	90	455	70.3	63.3
	Pavement Scarafier	1	20%	90	485	69.8	62.8
	Pavement Scarafier	1	20%	90	515	69.2	62.3
	Roller	1	20%	80	545	59.3	52.3
	Roller	1	20%	80	575	58.8	51.8
	Roller	1	20%	80	605	58.3	51.4
	Roller	1	20%	80	635	57.9	50.9
	Paver	1	50%	77	665	54.7	51.7
	Paver	1	50%	77	695	54.3	51.3
	Paver	1	50%	77	725	54.0	51.0
	Paver	1	50%	77	755	53.6	50.6
	Combined LEQ						**69.7**
Architectural Coating							
	Compressor (air)	1	40%	78	425	59.1	55.1
	Compressor (air)	1	40%	78	455	58.5	54.5
	Compressor (air)	1	40%	78	485	58.0	54.0
	Compressor (air)	1	40%	78	515	57.4	53.5
	Compressor (air)	1	40%	78	545	57.0	53.0
	Compressor (air)	1	40%	78	575	56.5	52.5
	Compressor (air)	1	40%	78	605	56.0	52.1
	Compressor (air)	1	40%	78	635	55.6	51.6
	Compressor (air)	1	40%	78	665	55.2	51.2
	Compressor (air)	1	40%	78	695	54.8	50.9
	Combined LEQ						**63.1**
Combined Construction/Paving/Painting							
	Pavement Scarafier	1	20%	90	165	79.1	72.1
	Pavement Scarafier	1	20%	90	195	77.7	70.7
	Pavement Scarafier	1	20%	90	225	76.4	69.4
	Pavement Scarafier	1	20%	90	255	75.3	68.4
	All Other Equipment > 5 HP	1	50%	85	285	69.9	66.9
	All Other Equipment > 5 HP	1	50%	85	315	69.0	66.0
	All Other Equipment > 5 HP	1	50%	85	345	68.2	65.2
	All Other Equipment > 5 HP	1	50%	85	375	67.5	64.5
	All Other Equipment > 5 HP	1	50%	85	405	66.8	63.8
	All Other Equipment > 5 HP	1	50%	85	435	66.2	63.2
	All Other Equipment > 5 HP	1	50%	85	465	65.6	62.6
	All Other Equipment > 5 HP	1	50%	85	495	65.1	62.1
	All Other Equipment > 5 HP	1	50%	85	525	64.6	61.6
	All Other Equipment > 5 HP	1	50%	85	555	64.1	61.1
	All Other Equipment > 5 HP	1	50%	85	585	63.6	60.6
	All Other Equipment > 5 HP	1	50%	85	615	63.2	60.2
	All Other Equipment > 5 HP	1	50%	85	645	62.8	59.8
	All Other Equipment > 5 HP	1	50%	85	675	62.4	59.4
	All Other Equipment > 5 HP	1	50%	85	705	62.0	59.0
	Tractor	1	40%	84	735	60.7	56.7
	Tractor	1	40%	84	765	60.3	56.3
	Tractor	1	40%	84	795	60.0	56.0
	Tractor	1	40%	84	825	59.7	55.7
	Tractor	1	40%	84	855	59.3	55.4
	Tractor	1	40%	84	885	59.0	55.1
	Tractor	1	40%	84	915	58.8	54.8
	Tractor	1	40%	84	945	58.5	54.5
	Tractor	1	40%	84	975	58.2	54.2
	Tractor	1	40%	84	1,005	57.9	54.0
	Tractor	1	40%	84	1,035	57.7	53.7
	Tractor	1	40%	84	1,065	57.4	53.5
	Tractor	1	40%	84	1,095	57.2	53.2
	Tractor	1	40%	84	1,125	57.0	53.0
	Tractor	1	40%	84	1,155	56.7	52.7
	Generator	1	50%	81	1,185	53.1	50.1
	Generator	1	50%	81	1,215	52.9	49.9
	Roller	1	20%	80	1,245	52.1	45.1
	Roller	1	20%	80	1,275	51.9	44.9
	Roller	1	20%	80	1,305	51.7	44.7
	Roller	1	20%	80	1,335	51.5	44.5
	Compressor (air)	1	40%	78	1,365	49.0	45.0
	Compressor (air)	1	40%	78	1,395	48.8	44.8
	Compressor (air)	1	40%	78	1,425	48.6	44.6
	Compressor (air)	1	40%	78	1,455	48.4	44.4
	Compressor (air)	1	40%	78	1,485	48.2	44.3
	Compressor (air)	1	40%	78	1,515	48.1	44.1
	Compressor (air)	1	40%	78	1,545	47.9	43.9
	Compressor (air)	1	40%	78	1,575	47.7	43.8
	Compressor (air)	1	40%	78	1,605	47.6	43.6
	Compressor (air)	1	40%	78	1,635	47.4	43.4
	Paver	1	50%	77	1,665	46.8	43.7
	Paver	1	50%	77	1,695	46.6	43.6
	Paver	1	50%	77	1,725	46.4	43.4
	Paver	1	50%	77	1,755	46.3	43.3
	Welder/Torch	1	40%	74	1,785	42.9	39.0
	Welder/Torch	1	40%	74	1,815	42.8	38.8
	Welder/Torch	1	40%	74	1,845	42.7	38.7
	Welder/Torch	1	40%	74	1,875	42.5	38.5
	Welder/Torch	1	40%	74	1,905	42.4	38.4
	Welder/Torch	1	40%	74	1,935	42.2	38.3
	Welder/Torch	1	40%	74	1,965	42.1	38.1
	Welder/Torch	1	40%	74	1,995	42.0	38.0
	Welder/Torch	1	40%	74	2,025	41.9	37.9
	Welder/Torch	1	40%	74	2,055	41.7	37.7
Combined LEQ							**77.1**

Project: **KPC Coachella Phase 6**
Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

	Receptor (Land Use)	Average Distance (feet)	Distance to Receptor (feet)	Shielding	Direction
1	Phase 1 Residential	2,100	200	0	W

Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	RECEPTOR 1 Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Site Preparation							
	Tractor	1	40%	84	200	72.0	68.0
	Tractor	1	40%	84	230	70.7	66.8
	Tractor	1	40%	84	260	69.7	65.7
	Tractor	1	40%	84	290	68.7	64.8
	Tractor	1	40%	84	320	67.9	63.9
	Tractor	1	40%	84	350	67.1	63.1
	Tractor	1	40%	84	380	66.4	62.4
	Tractor	1	40%	84	410	65.7	61.7
	Dozer	1	40%	82	440	62.8	58.8
	Dozer	1	40%	82	470	62.2	58.3
	Dozer	1	40%	82	500	61.7	57.7
	Dozer	1	40%	82	530	61.2	57.2
	Dozer	1	40%	82	560	60.7	56.7
	Dozer	1	40%	82	590	60.3	56.3
	Combined LEQ						**74.6**
Grading							
	Grader	1	40%	85	200	73.0	69.0
	Grader	1	40%	85	230	71.7	67.8
	Excavator	1	40%	81	260	66.4	62.4
	Excavator	1	40%	81	290	65.4	61.5
	Dozer	1	40%	82	320	65.6	61.6
	Dozer	1	40%	82	350	64.8	60.8
	Scraper	1	40%	84	380	66.0	62.0
	Scraper	1	40%	84	410	65.3	61.3
	Scraper	1	40%	84	440	64.7	60.7
	Scraper	1	40%	84	470	64.1	60.2
	Tractor	1	40%	84	500	64.0	60.0
	Tractor	1	40%	84	530	63.5	59.5
	Tractor	1	40%	84	560	63.0	59.0
	Tractor	1	40%	84	590	62.6	58.6
	Combined LEQ						**74.5**
Building Construction							
	All Other Equipment > 5 HP	1	50%	85	200	73.0	69.9
	All Other Equipment > 5 HP	1	50%	85	230	71.7	68.7
	All Other Equipment > 5 HP	1	50%	85	260	70.7	67.7
	All Other Equipment > 5 HP	1	50%	85	290	69.7	66.7
	All Other Equipment > 5 HP	1	50%	85	320	68.9	65.9
	All Other Equipment > 5 HP	1	50%	85	350	68.1	65.1
	All Other Equipment > 5 HP	1	50%	85	380	67.4	64.4
	All Other Equipment > 5 HP	1	50%	85	410	66.7	63.7
	All Other Equipment > 5 HP	1	50%	85	440	66.1	63.1
	All Other Equipment > 5 HP	1	50%	85	470	65.5	62.5
	All Other Equipment > 5 HP	1	50%	85	500	65.0	62.0
	All Other Equipment > 5 HP	1	50%	85	530	64.5	61.5
	All Other Equipment > 5 HP	1	50%	85	560	64.0	61.0
	All Other Equipment > 5 HP	1	50%	85	590	63.6	60.6
	All Other Equipment > 5 HP	1	50%	85	620	63.1	60.1
	Crane	1	16%	81	650	58.3	50.4
	Crane	1	16%	81	680	57.9	50.0
	Generator	1	50%	81	710	57.6	54.5
	Generator	1	50%	81	740	57.2	54.2
	Tractor	1	40%	84	770	66.2	62.2
	Tractor	1	40%	84	800	66.2	62.2
	Tractor	1	40%	84	830	66.2	62.2
	Tractor	1	40%	84	860	66.2	62.2
	Tractor	1	40%	84	890	66.2	62.2
	Tractor	1	40%	84	920	66.2	62.2
	Tractor	1	40%	84	950	66.2	62.2
	Tractor	1	40%	84	980	66.2	62.2
	Tractor	1	40%	84	1,010	66.2	62.2
	Tractor	1	40%	84	1,040	66.2	62.2
	Tractor	1	40%	84	1,070	66.2	62.2
	Tractor	1	40%	84	1,100	66.2	62.2
	Tractor	1	40%	84	1,130	66.2	62.2
	Tractor	1	40%	84	1,160	66.2	62.2
	Tractor	1	40%	84	1,190	66.2	62.2
	Welder/Torch	1	40%	74	1,220	46.3	42.3
	Welder/Torch	1	40%	74	1,250	46.0	42.1
	Welder/Torch	1	40%	74	1,280	45.8	41.9
	Welder/Torch	1	40%	74	1,310	45.6	41.7
	Welder/Torch	1	40%	74	1,340	45.4	41.5
	Welder/Torch	1	40%	74	1,370	45.2	41.3
	Welder/Torch	1	40%	74	1,400	45.1	41.1
	Welder/Torch	1	40%	74	1,430	44.9	40.9
	Welder/Torch	1	40%	74	1,460	44.7	40.7
	Welder/Torch	1	40%	74	1,490	44.5	40.5
	Combined LEQ						**78.8**

					RECEPTOR		1
Construction Phase	Equipment Type	No. of Equip.	Acoustical Usage Factor	Reference Noise Level at 50ft per Unit, Lmax	Distance (feet)	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq
Paving							
	Pavement Scarafier	1	20%	90	200	77.5	70.5
	Pavement Scarafier	1	20%	90	230	76.2	69.3
	Pavement Scarafier	1	20%	90	260	75.2	68.2
	Pavement Scarafier	1	20%	90	290	74.2	67.2
	Roller	1	20%	80	320	63.9	56.9
	Roller	1	20%	80	350	63.1	56.1
	Roller	1	20%	80	380	62.4	55.4
	Roller	1	20%	80	410	61.7	54.7
	Paver	1	50%	77	440	58.3	55.3
	Paver	1	50%	77	470	57.7	54.7
	Paver	1	50%	77	500	57.2	54.2
	Paver	1	50%	77	530	56.7	53.7
	Combined LEQ						**75.3**
Architectural Coating							
	Compressor (air)	1	40%	78	200	65.7	61.7
	Compressor (air)	1	40%	78	230	64.4	60.5
	Compressor (air)	1	40%	78	260	63.4	59.4
	Compressor (air)	1	40%	78	290	62.4	58.5
	Compressor (air)	1	40%	78	320	61.6	57.6
	Compressor (air)	1	40%	78	350	60.8	56.8
	Compressor (air)	1	40%	78	380	60.1	56.1
	Compressor (air)	1	40%	78	410	59.4	55.4
	Compressor (air)	1	40%	78	440	58.8	54.8
	Compressor (air)	1	40%	78	470	58.2	54.3
	Combined LEQ						**68.2**
Combined Construction/Paving/Painting							
	Pavement Scarafier	1	20%	90	165	79.1	72.1
	Pavement Scarafier	1	20%	90	195	77.7	70.7
	Pavement Scarafier	1	20%	90	225	76.4	69.4
	Pavement Scarafier	1	20%	90	255	75.3	68.4
	All Other Equipment > 5 HP	1	50%	85	285	69.9	66.9
	All Other Equipment > 5 HP	1	50%	85	315	69.0	66.0
	All Other Equipment > 5 HP	1	50%	85	345	68.2	65.2
	All Other Equipment > 5 HP	1	50%	85	375	67.5	64.5
	All Other Equipment > 5 HP	1	50%	85	405	66.8	63.8
	All Other Equipment > 5 HP	1	50%	85	435	66.2	63.2
	All Other Equipment > 5 HP	1	50%	85	465	65.6	62.6
	All Other Equipment > 5 HP	1	50%	85	495	65.1	62.1
	All Other Equipment > 5 HP	1	50%	85	525	64.6	61.6
	All Other Equipment > 5 HP	1	50%	85	555	64.1	61.1
	All Other Equipment > 5 HP	1	50%	85	585	63.6	60.6
	All Other Equipment > 5 HP	1	50%	85	615	63.2	60.2
	All Other Equipment > 5 HP	1	50%	85	645	62.8	59.8
	All Other Equipment > 5 HP	1	50%	85	675	62.4	59.4
	All Other Equipment > 5 HP	1	50%	85	705	62.0	59.0
	Tractor	1	40%	84	735	60.7	56.7
	Tractor	1	40%	84	765	60.3	56.3
	Tractor	1	40%	84	795	60.0	56.0
	Tractor	1	40%	84	825	59.7	55.7
	Tractor	1	40%	84	855	59.3	55.4
	Tractor	1	40%	84	885	59.0	55.1
	Tractor	1	40%	84	915	58.8	54.8
	Tractor	1	40%	84	945	58.5	54.5
	Tractor	1	40%	84	975	58.2	54.2
	Tractor	1	40%	84	1,005	57.9	54.0
	Tractor	1	40%	84	1,035	57.7	53.7
	Tractor	1	40%	84	1,065	57.4	53.5
	Tractor	1	40%	84	1,095	57.2	53.2
	Tractor	1	40%	84	1,125	57.0	53.0
	Tractor	1	40%	84	1,155	56.7	52.7
	Generator	1	50%	81	1,185	53.1	50.1
	Generator	1	50%	81	1,215	52.9	49.9
	Roller	1	20%	80	1,245	52.1	45.1
	Roller	1	20%	80	1,275	51.9	44.9
	Roller	1	20%	80	1,305	51.7	44.7
	Roller	1	20%	80	1,335	51.5	44.5
	Compressor (air)	1	40%	78	1,365	49.0	45.0
	Compressor (air)	1	40%	78	1,395	48.8	44.8
	Compressor (air)	1	40%	78	1,425	48.6	44.6
	Compressor (air)	1	40%	78	1,455	48.4	44.4
	Compressor (air)	1	40%	78	1,485	48.2	44.3
	Compressor (air)	1	40%	78	1,515	48.1	44.1
	Compressor (air)	1	40%	78	1,545	47.9	43.9
	Compressor (air)	1	40%	78	1,575	47.7	43.8
	Compressor (air)	1	40%	78	1,605	47.6	43.6
	Compressor (air)	1	40%	78	1,635	47.4	43.4
	Paver	1	50%	77	1,665	46.8	43.7
	Paver	1	50%	77	1,695	46.6	43.6
	Paver	1	50%	77	1,725	46.4	43.4
	Paver	1	50%	77	1,755	46.3	43.3
	Welder/Torch	1	40%	74	1,785	42.9	39.0
	Welder/Torch	1	40%	74	1,815	42.8	38.8
	Welder/Torch	1	40%	74	1,845	42.7	38.7
	Welder/Torch	1	40%	74	1,875	42.5	38.5
	Welder/Torch	1	40%	74	1,905	42.4	38.4
	Welder/Torch	1	40%	74	1,935	42.2	38.3
	Welder/Torch	1	40%	74	1,965	42.1	38.1
	Welder/Torch	1	40%	74	1,995	42.0	38.0
	Welder/Torch	1	40%	74	2,025	41.9	37.9
	Welder/Torch	1	40%	74	2,055	41.7	37.7
Combined LEQ							**77.1**

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: KPC Coachella Specific Plan
Project Number: 194079001
Scenario: Existing (2023)
Ldn/CNEL: CNEL

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

							Vehicle Mix		Distance from Centerline of Roadway				
			Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Dillon Road, between I-10 WB Ramps and Vista Del Norte	4	24	8,060	55	0.5	2.0%	1.00%	63.0	-	74	159	342
2	Vista Del Norte, between Dillon Road and Tyler Street	2	0	670	30	0.5	2.0%	1.00%	46.5	-	-	-	-
3	Vista Del Norte, east of Tyler Street	2	0	670	30	0.5	2.0%	1.00%	46.5	-	-	-	-
4	Avenue 50, between Leoco Lane and Magnolia Street/Tyler Street	4	0	7,960	45	0.5	2.0%	1.00%	60.7	-	51	111	239
5	Avenue 50, between Magnolia Street/Tyler Street and SR-86	2	0	7,390	45	0.5	2.0%	1.00%	60.3	-	48	104	224
6	Avenue 50, between Tyler Street and Polk Street	2	0	500	55	0.5	2.0%	1.00%	50.6	-	-	-	51
7	Avenue 50, between Polk Street and Fillmore Street	2	0	140	55	0.5	2.0%	1.00%	45.1	-	-	-	-
8	Avenue 50, between Fillmore Street and I-10 EB Ramps	0	0	--	0	0.5	2.0%	1.00%					
9	Polk Street, between Avenue 50 and Avenue 52	2	0	290	40	0.5	2.0%	1.00%	45.0	-	-	-	-
10	Avenue 52, between Van Buren Street and Cesar Chavez Street	4	0	12,840	40	0.5	2.0%	1.00%	61.6	-	59	127	274
11	Avenue 52, between Cesar Chavez Street and Sunset Drive	4	0	7,300	35	0.5	2.0%	1.00%	57.8	-	-	72	155
12	Avenue 52, between Sunset Drive and Tyler Street	4	5	8,410	35	0.5	2.0%	1.00%	58.5	-	-	79	171
13	Avenue 52, between Tyler Street and SR-86	4	0	5,440	50	0.5	2.0%	1.00%	60.1	-	47	102	219
14	West of Internal Intersection 1	0	0	--									
15	East of Internal Intersection 1	0	0	--									
16	North of Internal Intersection 5	0	0	--									
17	East of Internal Intersection 5	0	0	--									
18	Between Internal Intersection 1 and Internal Intersection 5	0	0	--									
19	Between Internal Intersection 5 and Internal Intersection 4	0	0	--									
20	Between Internal Intersection 2 and Internal Intersection 3	0	0	--									
21	Between Internal Intersection 3 and Internal Intersection 4	0	0	--									
22	Avenue 50, south of Internal Intersection 2	0	0	--									
23	South of Internal Intersection 4	0	0	--									

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

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: KPC Coachella Specific Plan
Project Number: 194079001
Scenario: Year 2045
Ldn/CNEL: CNEL

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

							Vehicle Mix		Distance from Centerline of Roadway				
			Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Dillon Road, between I-10 WB Ramps and Vista Del Norte	4	24	34,630	55	0.5	2.0%	1.00%	69.3	90	195	420	905
2	Vista Del Norte, between Dillon Road and Tyler Street	2	0	5,590	30	0.5	2.0%	1.00%	55.7	-	-	52	112
3	Vista Del Norte, east of Tyler Street	2	0	5,730	30	0.5	2.0%	1.00%	55.8	-	-	53	114
4	Avenue 50, between Leoco Lane and Magnolia Street/Tyler Street	4	0	13,830	45	0.5	2.0%	1.00%	63.1	-	74	160	345
5	Avenue 50, between Magnolia Street/Tyler Street and SR-86	2	0	19,030	45	0.5	2.0%	1.00%	64.4	42	91	195	421
6	Avenue 50, between Tyler Street and Polk Street	2	0	8,990	55	0.5	2.0%	1.00%	63.2	35	76	163	352
7	Avenue 50, between Polk Street and Fillmore Street	2	0	9,320	55	0.5	2.0%	1.00%	63.4	36	78	167	360
8	Avenue 50, between Fillmore Street and I-10 EB Ramps	2	0	7,730	40	0.5	2.0%	1.00%	59.3	-	42	89	193
9	Polk Street, between Avenue 50 and Avenue 52	2	0	3,940	40	0.5	2.0%	1.00%	56.3	-	-	57	123
10	Avenue 52, between Van Buren Street and Cesar Chavez Street	4	0	22,590	40	0.5	2.0%	1.00%	64.0	-	86	186	400
11	Avenue 52, between Cesar Chavez Street and Sunset Drive	4	0	18,150	35	0.5	2.0%	1.00%	61.8	-	61	132	284
12	Avenue 52, between Sunset Drive and Tyler Street	4	5	18,220	35	0.5	2.0%	1.00%	61.8	-	62	133	286
13	Avenue 52, between Tyler Street and SR-86	4	0	12,580	50	0.5	2.0%	1.00%	63.7	-	82	178	383
14	West of Internal Intersection 1	0	0	--									
15	East of Internal Intersection 1	0	0	--									
16	North of Internal Intersection 5	0	0	--									
17	East of Internal Intersection 5	0	0	--									
18	Between Internal Intersection 1 and Internal Intersection 5	0	0	--									
19	Between Internal Intersection 5 and Internal Intersection 4	0	0	--									
20	Between Internal Intersection 2 and Internal Intersection 3	0	0	--									
21	Between Internal Intersection 3 and Internal Intersection 4	0	0	--									
22	Avenue 50, south of Internal Intersection 2	0	0	--									
23	South of Internal Intersection 4	0	0	--									

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

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: KPC Coachella Specific Plan
Project Number: 194079001
Scenario: Year 2045+Project
Ldn/CNEL: CNEL

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

#	Roadway Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	CNEL at 100 Feet	Distance to Contour 70 CNEL	Distance to Contour 65 CNEL	Distance to Contour 60 CNEL	Distance to Contour 55 CNEL
1	Dillon Road, between I-10 WB Ramps and Vista Del Norte	4	24	23,220	55	0.5	2.0%	1.00%	67.6	69	149	322	693
2	Vista Del Norte, between Dillon Road and Tyler Street	2	0	10,880	30	0.5	2.0%	1.00%	58.6	-	38	81	174
3	Vista Del Norte, east of Tyler Street	2	0	5,480	30	0.5	2.0%	1.00%	55.6	-	-	51	110
4	Avenue 50, between Leoco Lane and Magnolia Street/Tyler Street	4	0	13,970	45	0.5	2.0%	1.00%	63.1	-	75	161	348
5	Avenue 50, between Magnolia Street/Tyler Street and SR-86	2	0	20,020	45	0.5	2.0%	1.00%	64.6	44	94	202	435
6	Avenue 50, between Tyler Street and Polk Street	2	0	12,470	55	0.5	2.0%	1.00%	64.6	44	94	203	438
7	Avenue 50, between Polk Street and Fillmore Street	2	0	19,000	55	0.5	2.0%	1.00%	66.4	58	125	269	579
8	Avenue 50, between Fillmore Street and I-10 EB Ramps	2	12	20,770	40	0.5	2.0%	1.00%	63.6	-	81	174	375
9	Polk Street, between Avenue 50 and Avenue 52	2	0	9,790	40	0.5	2.0%	1.00%	60.3	-	49	105	226
10	Avenue 52, between Van Buren Street and Cesar Chavez Street	4	0	22,900	40	0.5	2.0%	1.00%	64.1	-	87	187	403
11	Avenue 52, between Cesar Chavez Street and Sunset Drive	4	0	20,430	35	0.5	2.0%	1.00%	62.3	-	66	143	307
12	Avenue 52, between Sunset Drive and Tyler Street	4	5	20,680	35	0.5	2.0%	1.00%	62.4	-	67	145	311
13	Avenue 52, between Tyler Street and SR-86	4	0	15,980	50	0.5	2.0%	1.00%	64.8	45	97	208	449
14	West of Internal Intersection 1	2	0	6,250	25	0.5	2.0%	1.00%	54.8	-	-	45	96
15	East of Internal Intersection 1	2	0	16,840	25	0.5	2.0%	1.00%	59.1	-	40	87	186
16	North of Internal Intersection 5	2	0	4,940	25	0.5	2.0%	1.00%	53.7	-	-	38	82
17	East of Internal Intersection 5	2	0	890	25	0.5	2.0%	1.00%	46.3	-	-	-	-
18	Between Internal Intersection 1 and Internal Intersection 5	2	0	20,130	25	0.5	2.0%	1.00%	59.8	-	45	97	210
19	Between Internal Intersection 5 and Internal Intersection 4	2	0	12,880	25	0.5	2.0%	1.00%	57.9	-	34	72	156
20	Between Internal Intersection 2 and Internal Intersection 3	2	0	24,090	25	0.5	2.0%	1.00%	60.6	-	51	110	237
21	Between Internal Intersection 3 and Internal Intersection 4	2	0	13,310	25	0.5	2.0%	1.00%	58.0	-	34	74	159
22	Avenue 50, south of Internal Intersection 2	2	0	39,900	25	0.5	2.0%	1.00%	62.8	33	71	154	331
23	South of Internal Intersection 4	2	0	4,330	25	0.5	2.0%	1.00%	53.2	-	-	35	75

[1] Distance is from the centerline of the roadway segment to the receptor location.
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