NOISE TECHNICAL REPORT
(CWA #8)

RIVERSIDE TRANSMISSION RELIABILITY PROJECT (RTRP)
RIVERSIDE, CALIFORNIA

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GLOSSARY OF TERMS AND ACRONYMS

α	included angle
AN	audible noise
APM	applicant proposed measure
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Riverside
CNEL	Community Noise Equivalent Level
County	County of Riverside
CPUC	California Public Utilities Commission
dB	decibel
dBA	a-weighted decibel
EIR	Environmental Impact Report
EPRI	Electric Power Research Institute
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
I-15	Interstate 15
in/sec	inches per second
ISO	International Organization for Standardization
kV	kilovolt
LB	long barrier
L_{dn}	day/night average sound level
L_{max}	maximum noise level
LD	Larson-Davis, Inc.
L_{eq}	equivalent noise level over a period of time
LT	long-term
MB	medium barrier
mph	miles per hour
NSA	Noise Study Area
ppv	peak particle velocity
RI	Radio Interference
RN	Radio Noise
RPU	Riverside Public Utilities
RTRP	Riverside Transmission Reliability Project
S	designed barrier performance
SB	short barrier

SCE	Southern California Edison
SLM	sound level meter
SR	State Route
ST	short-term
TL	transmission loss
TVI	Television Interference
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

The purpose of this Noise Technical Report (Report) is to update the current noise analysis contained in *Final Environmental Impact Report Riverside Transmission Reliability Project* SCH#2007011113 ("EIR"), dated October 23, 2012, and as provided on the California Public Utilities Commission (CPUC) website[1]; and, address deficiency No. 2 relating to noise as described in the CPUC *Deficiency Report #2 for the Riverside Transmission Reliability Project Application* (A. 15-04-013), dated October 7, 2015 ("Deficiency Report") (CPUC 2015). Deficiency No. 2 in the Deficiency Report is a set of expectations and background that was stated as follows:

> *Provide additional data for daytime and night-time ambient noise levels in the proposed project area, including the existing homes and development along Wineville Avenue and Landon Drive. Provide noise level measurements at similar 230-kV transmission lines near the project area. Provide noise level planning contours at distances of 50-, 100-, and 200-feet from the proposed project for construction and operation of the proposed RTRP. The planning contours for construction should include cumulative noise generated from multiple pieces of construction equipment operating simultaneously.*
>
> *SCE Response to the Deficiency Report and the Final EIR both state the following with regard to construction noise, "noise would be short-term, occurring during daylight hours when the ambient noise levels are higher within the [RTRP] area". Further information is needed to define existing ambient noise levels in the project area and calculated noise levels at sensitive receptors along the alignment (i.e., at approved developments along the alignment).*
>
> *The RTRP EIR Volume 2 at pages 3-282 and 3-285 states that "Although corona noise varies widely with weather conditions and may be audible, no significant corona should be produced by lines energized below 345 kV (EPRI 1987). There would neither be a substantial nor a permanent increase in noise level." The Final EIR for the RTRP defines maximum corona noise levels during wet weather at 28 dBA; however the estimated noise level was not supported by noise measurements at similar 230-kV transmission*

[1] http://www.cpuc.ca.gov/Environment/info/panoramaenv/RTRP/PDF/Application/FEIR%20Vol%202/3_DEIR_ENVIRONMENTAL_ANALYSIS.pdf

lines in the area. Corona noise from a transmission line operating at 230-kV was measured at 29 dBA at 100 feet from the 230-kV transmission line during dry weather conditions in San Diego (SDG&E 2014). The maximum corona noise level may exceed 28 dBA at sensitive receptors.

Corona noise impacts would affect a larger number of sensitive receptors than considered in the Final EIR. Sensitive receptors to noise, such as residents of the new Riverbend housing project, were not contemplated in the Final EIR impact analysis, as this housing development was not constructed or approved at the time of the Final EIR.

Applicable information in the noise section of the EIR was utilized or referenced in the preparation of this Report. With scope limited to the proposed "I-15" 230 kV double-circuit transmission line (one of the Riverside Transmission Reliability Project [RTRP] features as described in the EIR, to be herein referred to as the "Project"), this Report presents the results of a new outdoor ambient noise level survey completed in its vicinity; analyzes potential impacts to noise-sensitive receptors resulting from the construction and operation (i.e., audible corona noise) of the Project,; and identifies avoidance, minimization, and mitigation measures to reduce potential significant noise impacts to noise-sensitive receptors.

1.2 PROJECT BACKGROUND

Background on the proposed Project is provided from the Project description from the EIR, as follows:

Pursuant to Southern California Edison's (SCE) Federal Energy Regulatory Commission (FERC)-approved Transmission Owner Tariff, Riverside Public Utilities (RPU) submitted a request in 2004 for SCE to provide additional transmission capacity to meet projected load growth and to provide for system reliability. SCE performed a series of interconnection studies that determined it could not expand Vista Substation, located in Riverside County, due to site and environmental constraints but could expand the regional electrical system to provide RPU a second source of transmission capacity to import bulk electric power. This would be accomplished by creation of a new SCE 230 kilovolts (kV) transmission connection, the construction of a new SCE substation, the construction of a new RPU substation, and the expansion of the RPU 69 kV subtransmission system. The RTRP would provide RPU with long-term system capacity for load growth, and needed system reliability and flexibility. Project components for the RTRP include construction of the new 230 kV structures and some new 69 kV structures,

development of temporary construction and permanent access roads, and temporary pulling sites.

The additional transmission capacity to RPU would be available through the new SCE Wildlife Substation at 230 kV and then transformed to 69 kV for integration into the RPU electrical system serving the City of Riverside (City). The transformation or "stepping down" of power from 230 kV to 69 kV would take place at a new substation, named Wilderness Substation, which would be a 230/69 kV substation, owned and operated by RPU. Wilderness and Wildlife Substations would be located adjacent to each other on property that is presently owned by and within the City.

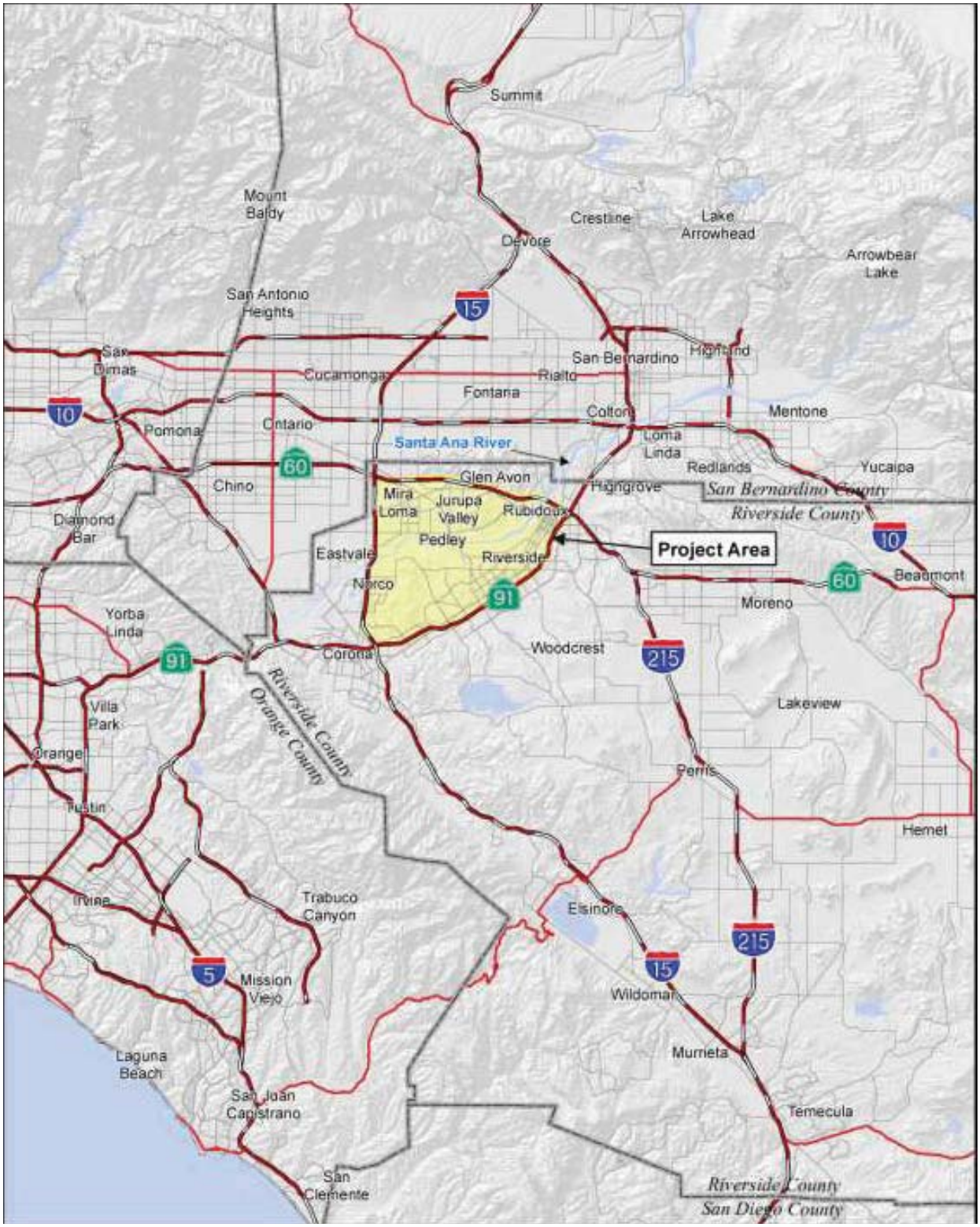
In order to integrate the additional transmission capacity into RPU's electrical system, RPU's 69 kV system would be expanded and divided into eastern and western systems. The existing source of energy from Vista Substation would continue to supply the eastern system, while the western system would be supplied through the proposed Wilderness Substation. Creating two separate 69 kV subsystems is necessary for prudent electric utility operation and would also help provide the required level of emergency back-up service, particularly in the event of an interruption to either 230/69 kV substation source.

Several new double-circuit 69 kV subtransmission lines would need to be constructed between 69 kV substations within the City. To accommodate these new subtransmission lines, upgrades would be required at four existing RPU 69 kV substations. The upgrades would take place within the existing boundaries of each substation.

New fiber optic communications would also be required for system control of Wilderness and Wildlife Substations and associated 69 kV and 230 kV transmission lines. The 69 kV communications would meet SCE's reliability standards.

1.3 PROJECT LOCATION

The Project area is located in the northwest portion of Riverside County (County), California, with portions of the Project area within the Cities of Riverside and Jurupa Valley (Figure 1). The Project area is bordered on the north by State Route (SR) 60 and the existing Mira Loma to Vista SCE Transmission Lines, on the west by Interstate 15 (I-15), and on the southeast by SR-91 (Figure 1). Land use within the Project area and immediate vicinity includes single-family residential, agricultural, and commercial development, as well as undeveloped open space.



Source: City of Riverside

Figure 1
Regional Map

No Scale

1.4 PROJECT DESCRIPTION

SCE proposes to construct a new SCE 230-kilovolt (kV) transmission line, which has a centerline alignment, as depicted in Figure 2 Project components to be installed along its alignment would thus include towers or lattices, new conductors, and interconnections to existing SCE infrastructure.

As summarized in the EIR, and for purposes of this noise study, the proposed 230-kV transmission line (maximum operating voltage of 242 kV) is a double-circuit design, with each of three phases comprising two subconductors separated by 18 inches with the height of the conductor an average of 25 meters above grade.

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1500 0 1500 3000 Feet

Figure 2
Proposed Project Map

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2.0 NOISE AND VIBRATION TERMINOLOGY

2.1 NOISE DESCRIPTORS

Noise is generally defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. The unit of measurement used to describe a noise level is the decibel (dB); decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease.

Human Perception of Noise

The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called "A-weighting" is used to filter noise frequencies that are not audible to the human ear. The A-scale approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale levels of those sounds. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise. In this Report, all noise levels are A-weighted and "dBA" is understood to identify the A-weighted dB. Table 1 provides typical noise levels associated with common activities.

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dBA or in terms of acoustical energy. Two noise sources do not sound twice as loud as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA (increase or decrease); that a change of 5 dBA is readily perceptible; and that an increase (or decrease) of 10 dBA sounds twice (or half) as loud (Caltrans 2011).

Averaging Noise Levels

In addition to noise levels at any given moment, the duration and averaging of noise over time is also important for the assessment of potential noise disturbance. Noise levels varying over time are averaged over a period of time, usually hour(s), expressed as dBA L_{eq}. For example, $L_{eq(3)}$ would be a 3-hour average noise level. When no period is specified, a 1-hour average is assumed ($L_{eq(1)}$ or L_{eq}).

Table 1
Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
-	110	Rock Band
Jet Fly-over at 300 m (1,000 ft)	100	-
Gas Lawn Mower at 1 m (3 ft)	90	-
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	80	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	60	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	50	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
-	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2011
Notes: m=meters
ft=feet
km/hr=kilometers per hour
mph=miles per hour

The time of day of noise is also an important factor to consider when assessing potential community noise impacts, as noise levels that may be acceptable during the daytime hours may create disturbance during evening or nighttime hours, when people are typically at home and sleeping. The Community Noise Equivalent Level (CNEL) is a descriptor used to characterize average noise levels over a 24-hour period, calculated from hourly L_{eq} values, with 5 dBA added to the hourly L_{eq} levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dBA added to the hourly L_{eq} levels occurring between 10:00 p.m. and 7:00 a.m., to reflect the greater disturbance potential from evening and nighttime noise, respectively. The day/night average sound level (L_{dn}) is the same as the CNEL, except the evening period is included as part of the daytime period.

General Characteristics of Community Noise

Ambient noise levels are generally considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Outdoor L_{dn} levels over 50 dBA vary depending on the specific type of land use. In wilderness areas, L_{dn} noise levels average approximately 35 dBA, in small towns or wooded residential areas approximately 50 dBA, in urban downtown areas (e.g., City of Riverside) approximately 75 dBA, and near major freeways and airports approximately 85 dBA. Average ambient levels in urban environments at night are about 7 dB lower than the corresponding daytime average ambient levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they are still considered adverse levels of noise to public health (USEPA 1974).

Corona Audible Noise (AN)

When a transmission or subtransmission line is in operation, an electric field is generated in the air surrounding the conductors, forming a "corona." A corona results from the partial breakdown of the electrical insulating properties of the air surrounding the conductors. When the intensity of the electric field at the surface of the conductor exceeds the insulating strength of the surrounding air, a corona discharge occurs at the conductor surface, representing a small dissipation of heat and energy. Some of the energy may dissipate in the form of small local pressure changes that result in audible noise or in radio or television interference. Audible noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a 120-Hz hum.

Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface, thereby making corona discharge and the associated audible noise more likely. Under "foul" weather conditions such as rain and high wind, ambient noise levels generated by the interaction of these conditions with the environment (e.g., rainfall on road pavement or rooftops) would generally be higher (and would thus potentially mask) than those generated by the corona effect from transmission line operation. Therefore, audible noise from transmission lines is generally a phenomenon experienced when high moisture content in the air, or subsequent to a precipitation event, provides opportunities for condensation or other wetting of the transmission line conductor surfaces. However, during "fair" dry weather, insects and dust on the conductors can also serve as sources of corona discharge, making the associated audible noise more likely.

Noise Attenuation

From the source to the receiver, noise changes both in level and frequency spectrum. The most obvious change is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on the following important factors: geometric divergence, ground absorption, atmospheric effects and refraction, shielding by natural and man-made features, noise barriers, diffraction, and reflection.

For a point or stationary noise source, such as construction equipment, the attenuation or drop-off in noise level would, due to geometric divergence, be at least -6 dBA for each doubling of unobstructed distance between source and the receiver and could attenuate to -7.5 dBA depending on the acoustic characteristics of the intervening ground. For a linear noise source, such as vehicles traveling on a roadway, the attenuation or drop-off in noise level would be approximately -3 dBA for each doubling of unobstructed distance between source and the receiver. While varying with temperature and humidity, atmospheric absorption can reasonably be expected to provide up to 1 dBA of attenuation per thousand feet that sound travels between a source and the receiver. Ground absorption effects, which depend on surface porosity and other characteristics, can be expected to provide up to an additional -4.8 dBA of noise attenuation (ISO 1996).

A large object in the path between a noise source and a receiver can significantly attenuate noise levels at that receiver. The amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, as well as man-made features, such as buildings and walls, can significantly alter noise levels. Walls or berms are often specifically used to reduce, or attenuate, noise.

Noise-Sensitive Receptors

Some land uses are considered more sensitive to noise than others due to the types of persons or activities involved, such as sleeping, reading, talking, or convalescing. Noise-sensitive receptors are generally considered those individuals engaged in activities, or occupying land uses, that may be subject to the stress of significant interference from noise, including, but not limited to, talking, reading, and sleeping. Typically, land uses associated with noise-sensitive human receptors include residential dwellings, hotels/motels, hospitals, nursing homes, educational facilities, and libraries.

2.2 VIBRATION

In addition to noise, construction activities generate vibration, which can be interpreted as energy transmitted in waves through the soil mass. These energy waves generally dissipate with distance from the vibration source, due to spreading of the energy and frictional losses. The energy transmitted through the ground as vibration, if great enough and in proximity to structures, can result in structural damage.

Typical outdoor sources of perceptible groundborne vibration are construction equipment and traffic on rough (i.e., unpaved or uneven) roads. Construction activity can also result in varying degrees of groundborne vibration, depending on the type of equipment, methods employed, distance between source and receptor, duration, number of perceived vibration events, and local geology.

Groundborne vibrations from typical construction activities do not often reach levels that can damage structures in proximity to construction, but their effects may manifest and be noticeable in buildings that are within 25 feet of construction activities. One major concern with regard to construction vibration is potential building damage, which is assessed in terms of peak particle velocity (ppv), typically in units of inches per second (in/sec). In addition to structural damage, the vibration of room surfaces affects people as human annoyance. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Typically, a vibration level of 0.1 in/sec ppv is the threshold of human annoyance, and 0.2 ppv is the threshold of risk of structural damage.

Construction operations generally include a wide range of activities that can generate various levels of groundborne vibration. In general, blasting, pile driving, and demolition of structures generate the highest vibrations. Heavy truck transport can also generate groundborne vibrations, which vary depending on vehicle type, weight, and pavement conditions. At 25 feet, some construction equipment generates vibration at levels exceeding the threshold of human annoyance (0.1 in/sec ppv), and at levels exceeding the threshold of risk of structural damage (0.2 in/sec ppv). However, at 50 feet, this same equipment is below the thresholds of human annoyance and structural damage (FTA 2006).

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3.0 EXISTING CONDITIONS

3.1 LAND USES

The Project area is characterized by rural, urban, and suburban development intermixed with agriculture and undeveloped lands. Extensive areas in the central portion of the Project area (Santa Ana River floodplain) are preserved open space, set aside for recreation, wildlife, and protected species. Rapid population growth in the Project area has resulted in increased development with accompanying changes in land use. The Project area is almost entirely developed.

The natural topography of the Project area is valley lowland intersected by a sinuous river corridor, with isolated bluffs and rolling hills, surrounded by mountain ranges. Elevations range from 680 to above 1,900 feet above mean sea level; however, the Project transmission alignment would be located in relatively flat areas.

3.2 EXISTING NOISE ENVIRONMENT

Noise Sources

The noise environment in the proposed Project area is typical of a rural setting, except at locations more directly affected by noise sources from transportation, recreation, industrial, cattle and horse facilities, and commercial and residential development. Motor vehicles traveling on I-15, SR-60, and several other arterial roadways contribute to transportation-related noise along with occasional aircraft overflights. Intermittent noise from outdoor activities at the surrounding residences (e.g., people talking, operation of landscaping equipment, car doors slamming, and dogs barking), although minor, also influences the ambient noise environment.

The primary noise source on and surrounding the Project site is traffic noise including vehicular traffic on I-15, SR-60, SR-91, Van Buren Boulevard, and other secondary roads along the alignment. Secondary noise sources are activities at the surrounding industrial, agricultural, commercial, office, and residential areas, and distant train activity and aircraft flyovers. The existing noise environment surrounding the Project site (non-event) is primarily influenced by noise from vehicle traffic on the roadways adjacent to and in proximity to the Project site. The predominant traffic noise at the Project site and surrounding areas is from I-15 and SR-60. The

Project site is also adjacent to major truck transport facilities off of I-15 at the northern extent of the Project transmission alignment.

Traffic noise level on roadways is dependent upon traffic volume, speed, flow, vehicle mix, pavement type, and condition. At higher speeds, typically on freeways, highways, and primary arterials, the noise from tire/pavement interaction can be greater than from vehicle exhaust and engine noise. Generally, traffic noise is increased by heavier traffic volumes, higher speeds, and large trucks. Free-flowing traffic just before or just after peak traffic periods is often the noisiest. Peak traffic periods generally result in lower noise levels due to traffic congestion, which lowers traffic speeds (Caltrans 2011).

Railroad activity occurs in the vicinity of the Project site along two transcontinental rail lines, the Burlington Northern & Santa Fe Railroad, and the Union Pacific Railroad. Metrolink commuter trains also occur in the Project area, operated by the Riverside County Transportation Commission.

Random aircraft flyovers occur in the vicinity of the Project site from high altitude commercial and military jets; low elevation traffic and news helicopters; and low elevation, single-engine, fixed-wing aircraft. The closest airports to the Project site are Riverside Municipal Airport and Flabob Airport (approximately 1 mile south and 2.5 miles northeast, respectively, of the eastern extent of the Project transmission line alignment), Los Angeles/Ontario International Airport (approximately 4 miles northwest of the northern extent of the Project transmission line alignment), and Chino Airport (approximately 5 miles west of the western extent of the Project transmission line alignment).

3.3 NOISE-SENSITIVE RECEPTORS

As shown in Figure 2, the proposed transmission line alignment (moving west to east) would be located within the existing right-of-way of existing roadways of Wineville Avenue, Edison Road, I-15, and 68th Street; across open space of a golf course and a county park, and along the Santa Ana River floodplain. In some areas, the alignment is adjacent to existing residential, commercial, and industrial development; and adjacent to and/or transecting entitled and under-construction development (from the alignment's northern end to the river crossing). As shown in Figures 5A-D and 6A-D, the entitled and under-construction developments (i.e., residential, commercial, and/or industrial type) considered for this noise analysis include:

1. D.R. Horton Homes (residential)
2. Lennar Homes/Rancho Del Sol (residential)

3. Lyon Homes (residential)
4. Stratham Homes (residential)
5. Thoroughbred Farms Business Park (light industrial, business park, commercial)
6. APV 1 and 2 Homes (residential)
7. Vernola Marketplace Apartments (residential)
8. Riverbend Development (residential)

Noise Measurements and Observations

To characterize the existing ambient noise environment, noise measurements and observations were performed on the Project site and at nearby noise-sensitive receptors in proximity to the Project site. Noise measurement locations are shown in Figure 3. A combination of 11 short-term ("ST", 15-minute duration) during the day and night periods (22 total ST measurements), and 2 long-term ("LT", 24-hour day-night) noise measurements were performed over a 36-hour period on November 11 and 12, 2015. The noise measurements were performed along the Project transmission alignment along roadways at single-family residences nearest the alignment, as well as commercial, industrial, and open space areas.

Noise measurements were taken by AECOM noise specialists using sound level meters (SLMs) manufactured by Larson-Davis, Inc. (LD). ST noise measurements were made with one LD Model LxT SLM, and LT measurements with two LD Model 820 SLMs. The SLMs were programmed in "slow" response mode, and to record noise levels with A-weighting. All noise measurements were taken approximately 5 feet above ground level using stationary tripods. SLM calibration was field-checked before and after each measurement using LD Model CAL 200 calibrators. During the measurements, the weather was generally clear and dry, with winds ranging from 0 to 9 miles per hour, and temperatures ranging between 52 and 81 degrees Fahrenheit.

Noise measurement locations and observations are summarized in Table 2 and detailed in Appendix A. For purposes of this noise analysis, the ST locations will be considered representative locations of existing or future (based on current or proposed development) residential land uses for which corresponding noise impact assessment criteria (based on land use or zoning) would apply.

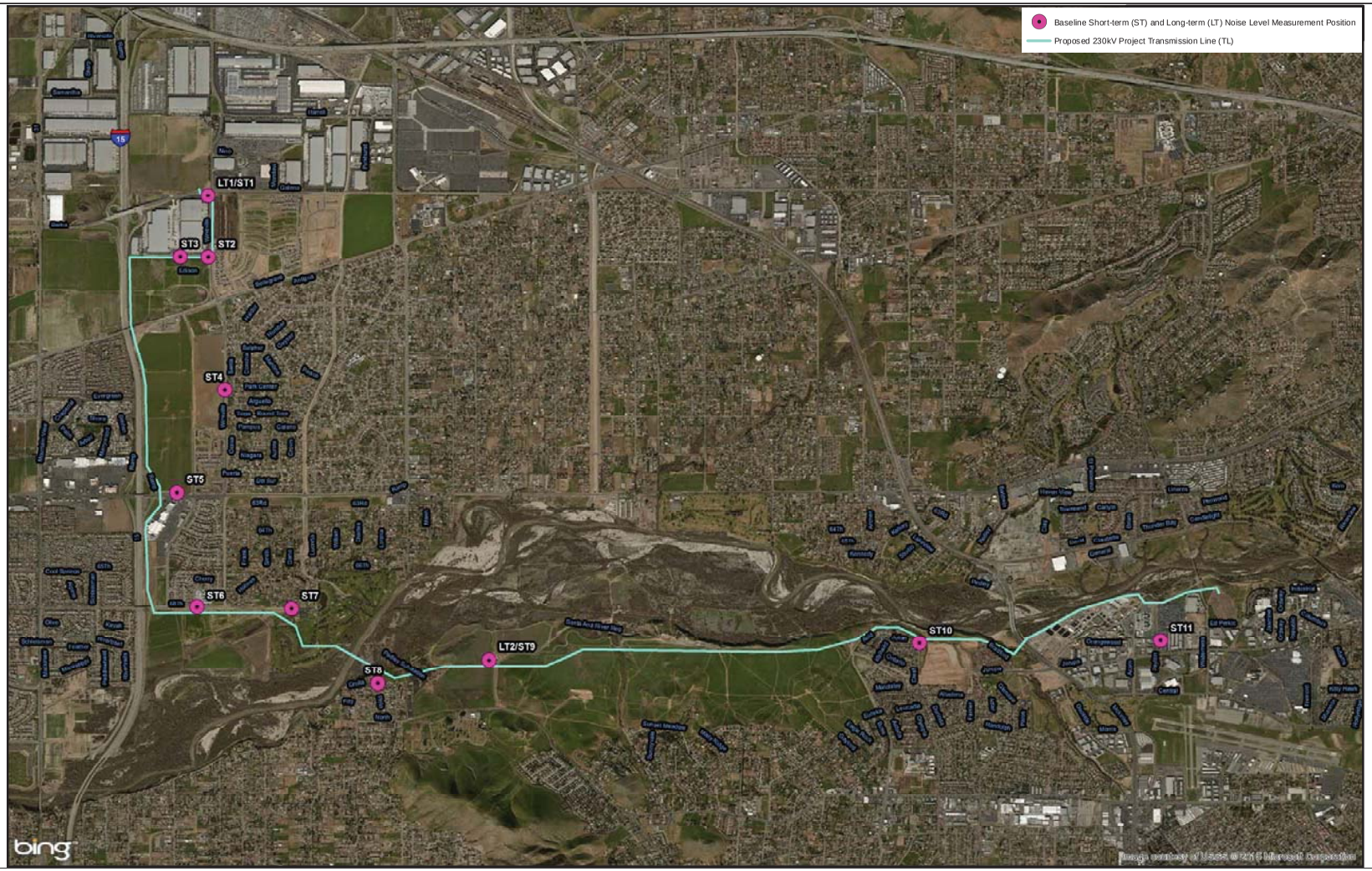
Table 2
Noise Measurement Locations

Site ID*	Location	Approximate Distance/ Direction from Project Alignment	Land Use	Dominant Noise Source
LT-1	Wineville Avenue /Canto-Galeano Ranch Road	110 feet/north	Commercial, trucking	Vehicle/truck traffic
LT-2	Hidden Valley County Park	212 feet/north	County park, open space	Vehicle traffic, off-road motorcycles
ST-1	Wineville Avenue /Canto Galeano	110 feet/north	Commercial, trucking	Vehicle/truck traffic
ST-2	Landon Drive @ Wineville Avenue	23/south	Commercial, trucking	Vehicle/truck traffic
ST-3	Landon Drive	28/south	Commercial, trucking	Vehicle/truck traffic
ST-4	Wineville Avenue @ Park Center	2,293 feet/east	Existing and proposed residential	Agricultural noise and vehicle traffic
ST-5	Park and Ride on Limonite Avenue @ I-15	490 feet/east	Commercial and open space	Vehicle/truck traffic
ST-6	68th Street @ Carnellian Street	214/north	Existing and proposed residential	Vehicle traffic
ST-7	68th Street @ Dana Avenue	430 feet/north	Existing residential and golf course	Vehicle traffic and aircraft flyovers
ST-8	Gruela Court @ Pinto Lane	425 feet/south	Existing residential and open space	Vehicle traffic and aircraft flyovers
ST-9	Hidden Valley Wildlife Area Access Road	212 feet/north	County park, open space	Strong winds, park goers voices
ST-10	Julian Drive @ Crest Avenue	168/south	Existing residential, open space	Vehicle traffic and aircraft flyovers
ST-11	Payton Street	1,330 feet/south	Industrial and open space	Vehicle traffic and aircraft flyovers

* The Site ID corresponds to noise measurement locations shown in Figure 3.

As shown in Table 2 and Figure 3, the current land uses at the measurement locations along the alignment from west to east (ST-1 to ST-11) include a commercial warehouse trucking district near I-15 including existing residential development; a golf course, Santa Ana River crossing and floodplain area, open park space and existing residential development; and an industrialized area.

Also shown in Figure 3 are the aforementioned entitled and under-construction developments, for which the baseline outdoor ambient sound levels will (for purposes of this analysis) be represented by the measured sound levels from the field survey as follows:



1500 0 1500 3000 Feet

Figure 3
Noise Measurement Locations

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1. D.R. Horton Homes (ST-4, due to its distance from I-15 and its position on the same northwest perimeter [Wineville Avenue and Bellegrave Avenue] of the currently built-out residential community that adjoins the southern edge of this development).

2. Lennar Homes/Rancho Del Sol (ST-4, for the same reasons as #1 above).

3. Lyon Homes (the average of ST-2 and ST-4, due to the former adjoining the development on its western edge, and the latter for the same reasons as #1 and #2 above).

4. Stratham Homes (the average of ST-1 and ST-2, since they both adjoin the development on its western edge).

5. Thoroughbred Farms Business Park (the average of ST-2 and ST-3, since they both adjoin the development on its northern edge).

6. APV 1 and 2 Homes (ST-4, since it adjoins the northeast corner of APV 2 and is north of APV 1 [but adjoins the same Wineville Avenue perimeter of the existing residential community immediately east]).

7. Vernola Marketplace Apartments (ST-5, since it shares the same distance to I-15 as does the eastern edge of the development [Pat's Ranch Road]).

8. Riverbend Development (the average of ST-6 and ST-7, since these survey positions adjoin the northern edge of the development).

Ambient noise level measurements are summarized in Table 3 and detailed in Appendix A.

As shown in Table 3, ST ambient noise level measurements ranged from 47 to 68 dBA L_{eq} during the day and 36 to 71 dBA L_{eq} at night. LT ambient noise level measurements ranged from 70 dBA CNEL at LT-1 to 52 dBA CNEL at LT-2. Dominant noise sources were primarily from vehicle traffic on adjacent roadways and I-15 (including heavy trucks) and aircraft flyovers.

3.4 MEASUREMENT OF CORONA AUDIBLE NOISE

As part of satisfying the stated expectations of the Deficiency Report as quoted in Section 1.1, "*Provide noise level measurements at similar 230-kV transmission lines near the project area,*" outdoor ambient noise level measurements and documented observations of field conditions were performed at a non-Project site at various distances from an existing SCE 230kV

Table 3
Measured Existing Outdoor Ambient Noise Levels

Site ID*	Date (mm/dd/yy)	Start/Stop Time (hh:mm)	CNEL (dBA)	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)	L_{10} (dBA)	L_{50} (dBA)	L_{90} (dBA)
LT-1	11/11/15 11/12/15	12:05/ 13:25	70	64	91	48	66	61	57
LT-2	11/11/15 11/12/15	14:40/ 15:45	52	45	67	29	46	41	39
ST-1D	11/12/15	13:10/13:25	68	63	72	52	66	61	57
ST-1N	11/12/15	14:35/14:50		61	73	48	63	56	51
ST-2D	11/12/15	12:45/13:00	77	66	81	51	70	60	53
ST-2N	11/12/15	02:10/02:25		71	81	46	57	50	49
ST-3D	11/12/15	12:25/12:40	65	62	84	42	62	49	44
ST-3N	11/12/15	01:50/02:05		57	79	44	55	51	49
ST-4D	11/12/15	12:00/12:15	68	68	96	43	61	54	49
ST-4N	11/12/15	01:25/01:40		47	60	41	49	45	43
ST-5D	11/12/15	11:20/11:35	64	60	73	48	63	58	53
ST-5N	11/12/15	01:00/01:15		56	68	45	60	52	48
ST-6D	11/12/15	15:10/15:25	67	67	84	48	68	60	55
ST-6N	11/12/15	00:35/00:50		50	66	36	52	43	40
ST-7D	11/12/15	13:55/14:10	48	47	66	34	49	40	37
ST-7N	11/12/15	00:10/00:25		36	43	34	38	36	35
ST-8D	11/12/15	14:35/14:50	54	53	71	33	54	39	36
ST-8N	11/11/15	23:30/23:45		43	51	39	45	43	41
ST-9D	11/11/15	15:05/15:20	61	47	61	33	48	42	38
ST-10D	11/11/15	16:55/17:10	57	52	68	41	55	45	43
ST-10N	11/11/15	22:55/23:10		49	59	44	51	48	46
ST-11D	11/11/15	16:25/16:40	58	55	72	44	57	48	46
ST-11N	11/11/15	22:30/22:45		50	69	45	51	47	46

* The Site ID corresponds to noise measurement locations shown in Figure 3.
** For short-term (ST) locations, CNEL values calculated from day and night measurement data, applying daytime measured value as the estimated evening noise level. For ST-9, daytime measurement value used day, evening and nighttime periods.

transmission line (location provided by SCE) that is currently in operation. Corona noise measurement locations are shown in Appendix A. The intent of the measurements was to measure audible corona noise, distinguished from background noise sources. A combination of three (3) concurrent ST measurements were conducted during the late afternoon (between 6:00 to 6:30 p.m.) on Saturday, November 21, 2015. Representing the AECOM field investigators' best efforts to measure and collect corona noise level data at distances of 50, 100 and 200 feet using available GPS tools and SCE-furnished information, the noise measurements were performed on Eucalyptus Road at distances of 56, 111, and 213 feet from the existing transmission line centerline traversing the road overhead.

Noise measurements were taken by AECOM noise specialists using sound level meters (SLMs) manufactured by Larson-Davis, Inc. (LD). ST noise measurements were made with two LD Model LxT SLMs and one LD Model 820 SLM. The SLMs were programmed to record A-weighted noise levels with a "slow" response, and the calibration was field-checked before and after the measurement using LD Model CAL200 calibrator. During the measurement, the weather was generally clear and dry, with average wind speeds ranging from 7 to 8 miles per hour, and the temperature was 75 degrees Fahrenheit.

Noise measurement locations and observations are summarized in Table 4 and detailed in Appendix A.

Table 4
Measurements of Corona Audible Noise (AN) from an Existing 230 kV Line

Site ID	Date (mm/dd/yy)	Start/Stop Time (hh:mm)	Distance from Existing 230kV Transmission Line (ft)	L_{eq} (dBA)	L_{min} (dBA)	L_5 (dBA)	L_{50} (dBA)
ST-01	11/21/2015	18:07 / 18:31	56	43.4	42.1	44.5	43.2
ST-02	11/21/2015	18:09 / 18:32	111	43.5	42.1	45.2	43.3
ST-03	11/21/2015	18:13 / 18:26	213	40.9	39.5	42.0	40.6

As shown in Table 4, the ST noise level measurements of the existing 230 kV transmission line ranged from 41 to 44 dBA L_{eq}. The dominant noise source during this measurement was the audible "crackle" and buzz of corona noise emanating from the elevated transmission line. Additional observed sound sources that contributed to the overall measured levels were frequent aircraft flyovers and possible substation noise to the north-northeast. In an effort to reduce the acoustical contribution of these other sound sources that contributed to the measured outdoor ambient sound environment, the metrics and statistical values reported in Table 4 are average levels calculated from the three lowest 1-minute intervals of the measurement. In other words, and assuming the corona noise was fairly constant (as suggested by all four values in Table 4 for each location staying within a 3 dBA range), usage of the lowest 1-minute intervals suggests that the influence of background noise (e.g., winds, distant traffic, etc.) would be least during those measured durations.

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4.0 REGULATORY FRAMEWORK

This section provides a summary of the applicable federal, state, and local noise regulations.

4.1 FEDERAL REGULATIONS

The federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise-sensitive" uses are prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized. Federal noise policies and programs are developed by federal agencies of the U.S. Department of Transportation through its various operating agencies, i.e., the Federal Aviation Administration, the Federal Transit Administration (FTA), and the Federal Highway Administration (FHWA).

Currently, there are no AN control regulations that are specifically concerned with AN from power facilities. The U.S. Environmental Protection Agency has published guidelines relating to AN in general, which recommend that the L_{dn} be limited to 55 dBA outdoors and 45 dBA indoors (USEPA 1974).

4.2 STATE REGULATIONS

California Government Code, General Plan Noise Elements

California does not promulgate statewide standards for environmental noise, but California State Government Code Section 65302(f) requires each local jurisdiction to draft a Noise Element for their General Plan to establish acceptable noise limits for various land uses. The California Administrative Code provides guidelines for evaluating the compatibility of various land uses as a function of community noise exposure.

California Department of Transportation

The California Department of Transportation (Caltrans) provides vibration level thresholds for architectural and structural damage and human perception thresholds. The Project is not subject to Caltrans requirements; however, Caltrans provides vibration thresholds for reference. To assess the potential for structural damage associated with vibration from construction activities, the vibratory ground motion in the vicinity of an affected structure is measured in terms of ppv,

typically in units of in/sec. Table 5 presents the vibration level thresholds for architectural and structural damage and human perception and annoyance.

Table 5
Human and Structural Response to Vibration

Effects on Structures and People	Peak Vibration Threshold (ppv) (in/sec)
Structural damage to commercial structures	6
Structural damage to residential buildings	2
Architectural damage	1.0
General threshold of human annoyance	0.1
General threshold of human perception	0.01

Source: Caltrans 2002

As shown in Table 5, structural damage occurs to various structures when vibration levels reach 2 to 6 in/sec ppv at the respective structures. One-half of the minimum of this threshold range (i.e., 1 in/sec ppv) is considered a safe criterion that would protect against structural damage. For its construction projects, Caltrans uses a vibration criterion of 0.2 in/sec ppv, except for pile driving and blasting activities.

California Environmental Quality Act of 1970

The California Environmental Quality Act (CEQA), Public Resources Code 21100 et seq., requires lead agencies to evaluate the environmental impact associated with a proposed project. CEQA requires that a local agency prepare an EIR on any project it proposes to approve that may have a significant effect on the environment. Technical reports such as this Report are used to develop noise sections of EIRs. CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15064.7) provide thresholds of significance for noise.

California Public Utilities Commission

CPUC has sole and exclusive state jurisdiction over the siting and design of the proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county

and cities do not have jurisdiction over the proposed Project. Accordingly, the following discussion of local regulations is provided for informational purposes only.

4.3 LOCAL REGULATIONS

The proposed Project alignment is located within four jurisdictions: Riverside County, and the cities of Riverside, Jurupa Valley, and Norco. Municipal policies, ordinances, and significance thresholds with respect to noise, applicable to the proposed Project, are included in the:

- County's General Plan Noise Element (Riverside County 2008),
- County's Municipal Code Noise Ordinance (Riverside County 2006),
- City of Riverside Municipal Code Noise Ordinance (City of Riverside 1996),
- City of Riverside General Plan Noise Element (City of Riverside 2007),
- City of Jurupa Valley Municipal Code Noise Ordinance (City of Jurupa Valley 2012), and
- City of Norco Municipal Code Noise Ordinance (City of Norco 2015).

County of Riverside

General Plan, Noise Element

The Noise Element of the Riverside County General Plan contains specific goals and policies for evaluating a project's compatibility with surrounding land uses (Riverside County 2008). The following goals and policies related to noise are relevant to the proposed Project:

Policy N 4.1: Prohibit facility-related noise, received by any sensitive use, from exceeding
45 dB-10-minute L_{eq} between 10:00 p.m. and 7:00 a.m. (nighttime)
65 dB-10-minute L_{eq} between 7:00 a.m. and 10:00 p.m. (daytime)

Policy N 4.2: Develop measures to control non-transportation noise impacts.

Policy N 4.3: Ensure any use determined to be a potential generator of significant stationary noise impacts be properly analyzed, and ensure that the recommended mitigation measures are implemented.

Policy N 12.1: Minimize the impacts of construction noise on adjacent uses within acceptable practices.

Policy N 12.2: Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

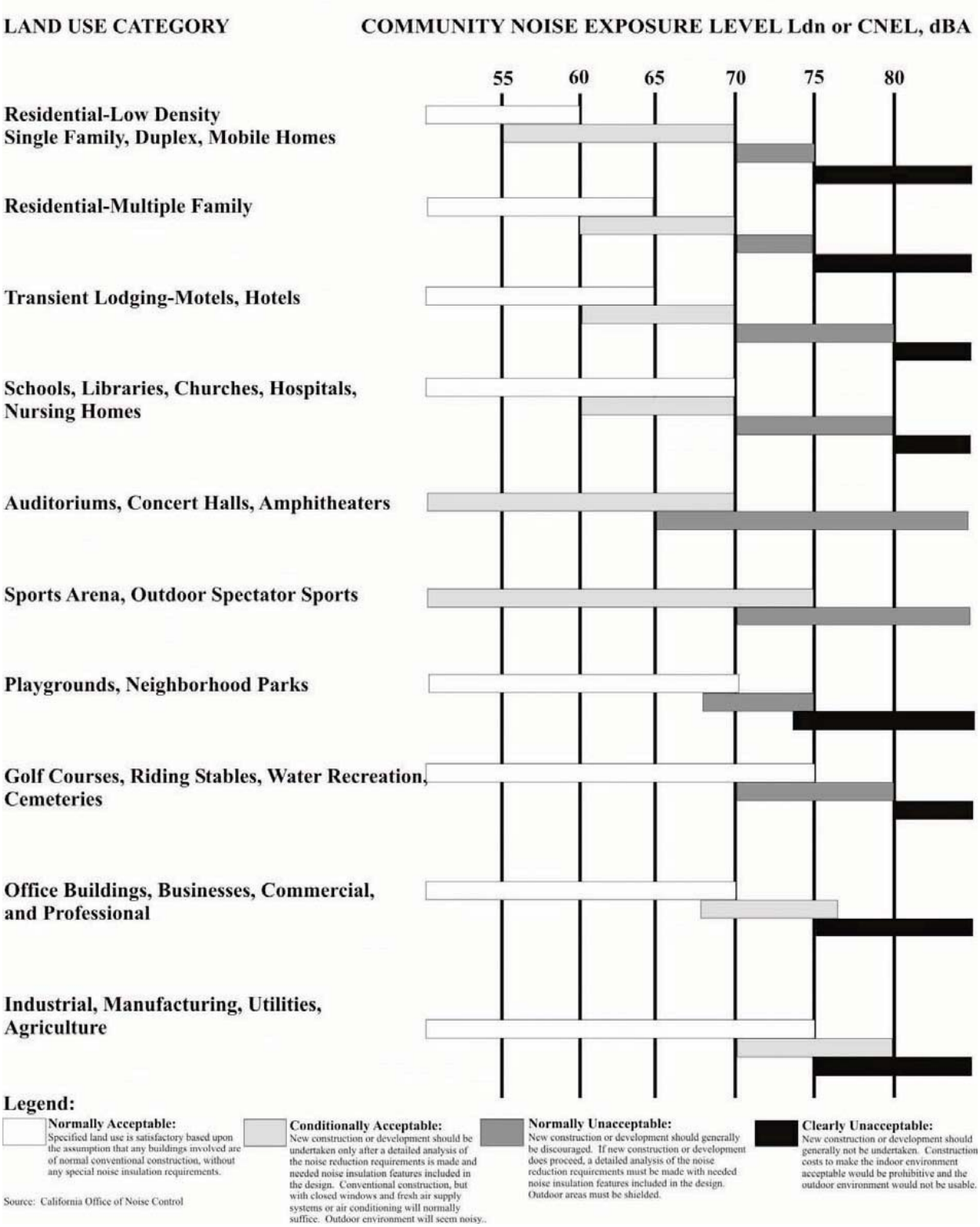
Policy N 12.4: Require that all construction equipment utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Riverside County adheres to California state laws with regard to noise levels (i.e., the County of Riverside General Plan, Chapter 7 Noise Element. Table N-1 "Land Use Compatibility for Community Noise Exposure" (Table 6) is the same as the State's Community Noise Exposure chart). Single-family residential land uses are considered acceptable for noise levels up to 60 dBA CNEL.

Noise Ordinance

Riverside County regulates noise in accordance with Chapter 9.52, Noise Regulations of the Riverside County Municipal Code (Noise Ordinance 847) (Riverside County 2006). Section 9.52.030 of the Municipal Code defines a sensitive receptor as a land use that is sensitive to noise including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries, or public libraries. Section 9.52.040 of the Municipal Code states that maximum noise levels from stationary noise sources at the property line of a sensitive receptor (medium density residential and low density residential in the proposed Project area) are to remain below 45 dB during nighttime hours (10:00 p.m. to 7:00 a.m.) and are not to exceed 55 dB during daytime hours (7:00 a.m. to 10:00 p.m.). Section 9.52.020[I] states that sound emanating from private construction projects located within one-quarter mile from an inhabited dwelling is exempt from the provisions of Chapter 9.52, if construction occurs between the hours of 6:00 a.m. and 6:00 p.m. during the months of June through September, and between the hours of 7:00 a.m. and 6:00 p.m. during the months of October through May.

Table 6
Riverside County Land Use Compatibility for Community Noise Exposure



Under Ordinance No. 847, the County could consider providing a construction-related exception to the county sound level standards, if an application for a construction-related exception has been filed and approved by the County's Director of Building and Safety. According to Ordinance 847, an exception application shall not be approved unless: *the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decision making body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.* Ordinance 847 exempts facilities and capital improvement projects of a governmental agency.

City of Riverside

General Plan, Noise Element

The City noise/land use compatibility guidelines are outlined in the City's General Plan Noise Element Figure N–10 Noise/Land Use Compatibility Criteria (Table 7), which show a range of noise standards for various land use categories in terms of dBA CNEL. Depending on the ambient environment of a particular community, these basic guidelines may be tailored to reflect existing noise and land use characteristics. Noise levels occurring during nighttime hours are weighted more heavily than during the daytime. Single-family residential land uses are considered acceptable for noise levels up to 60 dBA CNEL.

Noise Ordinance

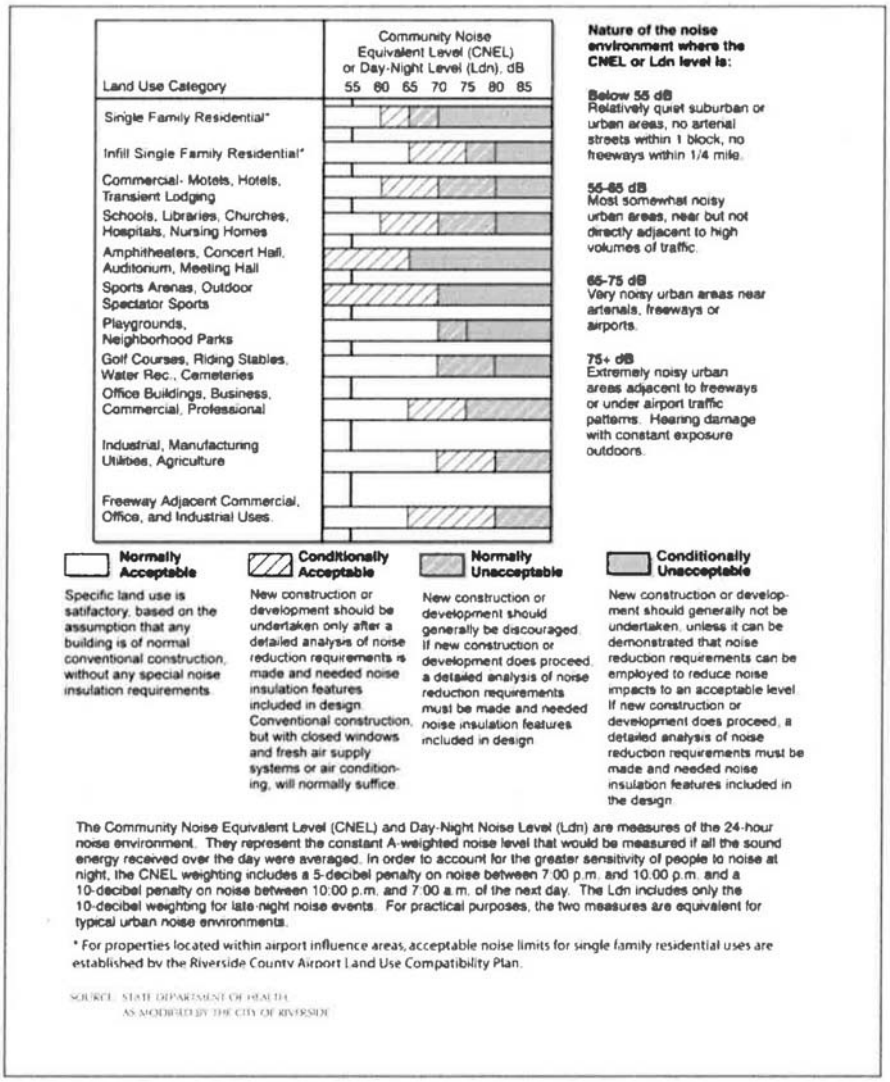
The City of Riverside's Noise Ordinance Chapter 7.35 (City of Riverside 1996) prohibits any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity including permitting any noise disturbance that is:

a. Plainly audible across property boundaries;

b. Plainly audible through partitions common to two residences within a building;

c. Plainly audible at a distance of 50 feet in any direction from the source of music or sound between the hours of 7:00 a.m. and 10:00 p.m.; or

Table 7
City of Riverside Noise/Land Use Compatibility Criteria



d. Plainly audible at a distance of 25 feet in any direction from the source of music or sound between the hours of 10:00 p.m. and 7:00 a.m.

The City's noise ordinance does not provide noise level limits.

The City's noise ordinance limits construction activities to the hours of 7 a.m. to 7 p.m. on weekdays, and to 8 a.m. to 5 p.m. on Saturdays. Construction is not allowed on Sundays and Federal Holidays. Provisions of this noise ordinance do not apply to construction, maintenance

and repair operations, which are deemed necessary to serve the best interest of the public and which are conducted by public agencies and/or utilities or their contractors (City of Riverside 1996).

City of Jurupa Valley

The City of Jurupa Valley regulates noise in accordance with the Jurupa Valley Municipal Code Noise Ordinance, Chapter 11.10 Noise Regulations (City of Jurupa Valley 2012), which is intended to establish city-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established. Sound emanating from the following sources applicable to the proposed Project is exempt from the provisions of this chapter:

- Facilities owned or operated by of/for a governmental agency;
- Capital improvement projects of a governmental agency.
- Private construction projects located one-quarter of a mile or more from an inhabited dwelling;
- Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that:
    - Construction does not occur between the hours of six p.m. and six a.m. during the months of June through September, and
    - Construction does not occur between the hours of six p.m. and seven a.m. during the months of October through May;

The City's noise ordinance provides noise level limits; the listed exterior sound level limits for residential classifications 55 dBA (daytime)/45 dBA (night time) respectively (City of Jurupa Valley 2012).

City of Norco

The City of Norco regulates noise in accordance with the City of Norco Municipal Code, Chapter 9.07 Noise Regulations (City of Norco 2015). Private construction projects involving no more than one unit located within one-quarter of a mile from an inhabited dwelling is exempt provided, that construction does not occur between the hours of 7:00 p.m. and 6:30 a.m.,

Monday through Friday and 7:00 p.m. and 8:00 a.m., on Saturday and Sunday, unless specified by permit.

Section 15.30.020 provides hours of construction activity. Construction activity, including equipment start-up and use, and the loading, unloading and handling of materials, shall not commence before 6:30 a.m., or continue beyond 7 p.m., on weekdays. No construction activity for residential development projects that consist of more than one unit is permitted on Saturdays, Sundays, or national holidays unless otherwise permitted with conditions on entitlements.

The City's noise ordinance provides noise level limits; the listed exterior sound level limits for residential classifications 55 dBA (daytime)/45 dBA (night time) respectively (City of Norco 2015.

4.4 SIGNIFICANCE THRESHOLD CRITERIA

Noise levels attributed to Project construction and operation, or their acoustical contribution to a future outdoor ambient sound environment, must comply with relevant applicable federal, state, or local standards or regulations. However, consideration is given to the applicability of local ordinances, where the project is governed by a CPUC license, as discussed in Section 4.2 State Regulations, California Public Utilities Commission.

The increase in noise levels above the existing ambient level as a result of the Project also needs to be considered. A change in noise level due to a new noise source can create an impact on people. Outside controlled laboratory conditions, noise level changes below 3 dBA are not detectable by the human ear. Although individuals' reactions to changes in noise vary, empirical studies have shown people begin to notice changes in environmental noise levels of around 5 dBA (USEPA 1974). Thus, average changes in noise levels less than 5 dBA cannot be considered as producing a potentially significant adverse impact because changes of that magnitude are imperceptible by the vast majority of persons. For changes in noise levels above 5 dBA, it is difficult to quantify the impact beyond the determination that, the greater the noise level change, the greater the impact. A judgment commonly used in community noise impact analyses associates long-term noise increases of 5 to 10 dBA with "some impact."

Noise level increases of more than 10 dBA are generally considered significant (USEPA 1974). In the case of short-term noise increases, such as those from construction, the 10 dBA threshold between "less significant" and "significant" impact is often replaced with a criterion of 15 dBA (USEPA 1974). These noise-averaged thresholds are to be lowered when the noise level fluctuates, or the noise has an irritating character with considerable high frequency energy, or if

it is accompanied by subsonic vibration. In these cases, the impact must be individually estimated (USEPA 1974).

The assessment of significant noise impacts is weighed in consideration of CEQA requirements. For this discussion, CEQA describes a significant effect as one that would create a substantial, or potentially substantial, adverse change in the noise conditions of the environment in the area. Appendix G of the CEQA guidelines defines the criteria and areas of concern regarding a project's potential impact on noise-sensitive receptors by considering if a project would result in:

> a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The County and City of Riverside General Plan Noise Elements provide that single-family residential land uses are considered acceptable for noise levels up to 60 dBA CNEL.

The City of Riverside noise ordinance limits construction activities to the hours of 7 a.m. to 7 p.m. on weekdays, and to 8 a.m. to 5 p.m. on Saturdays. The City of Norco noise ordinance limits construction activities to the hours of 6:30 a.m. to 7 p.m. on weekdays. The County and the City of Jurupa Valley noise ordinances exempt construction noise from private construction projects located within one-quarter mile from an inhabited dwelling, and within one-quarter mile from an inhabited dwelling, provided construction occurs between the hours of 6 a.m. to 6 p.m. during the months of June through September, and 7 a.m. to 6 p.m. during the months of October through May.

Riverside County and the Cities of Jurupa Valley and Norco noise ordinances limit maximum noise levels from stationary noise sources at the property line of a sensitive receptor (medium density residential and low density residential in the proposed Project area) are to remain below 45 dB during nighttime hours (10:00 p.m. to 7:00 a.m.) and are not to exceed 55 dB during daytime hours (7:00 a.m. to 10:00 p.m.). The City of Riverside's noise ordinance prohibits any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity including permitting any noise disturbance that is: plainly audible across property boundaries; plainly audible through partitions common to two residences within a building; plainly audible at a distance of 50 feet in any direction from the source of music or sound between the hours of 7:00 a.m. and 10:00 p.m.; or plainly audible at a distance of 25 feet in any direction from the source of music or sound between the hours of 10:00 p.m. and 7:00 a.m.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Excessive vibration levels are defined as exceeding vibration standards provided by FTA and Caltrans (Table 2). Typically, a vibration level of 0.1 in/sec ppv is the threshold of human annoyance, and 0.2 ppv is the threshold of risk of structural damage. At 50 feet, construction equipment is typically below the thresholds of human annoyance and structural damage (FTA 2006), except for rock blasting and impact pile driving activities which generate the highest vibration levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Operational noise is typically considered permanent, i.e., for the duration of the operation of the constructed facility. A significant permanent increase is defined as a direct Project-related permanent ambient increase of 5 dBA or greater. An increase of 3 dBA is a barely perceptible increase, and an increase of less than 5 dBA cannot be considered as producing a potentially significant adverse impact because changes of that magnitude are imperceptible by the vast majority of persons.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Construction noise is typically considered temporary and short term (i.e., its effect on the environment ceases upon conclusion of construction activities). A substantial temporary increase in ambient noise levels is defined as a direct Project-related increase of 10 dBA L_{eq} or greater, based on the noise standard that a 10 dBA increase is perceived by the human ear as twice as loud (FTA 2006).

e) For a project located within 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?

There are public airports within 2 miles of the Project area, the closest major airport is Riverside Municipal Airport. The airport noise is 65 dBA CNEL for a distance of approximately 10,000 feet along and away from the runway and 55 dBA to a distance of approximately 20,000 feet from the center of the airport towards the northwest (approximately 15,000 feet towards the southeast) (City of Riverside 2007), and surrounding area ambient noise levels are 55 to 60 dBA

for distances of several thousand feet from the centerline references of these transportation areas. Therefore, noise from the proposed transmission line would not be higher than existing airport and highway noise. Construction workers would not be exposed to excessive noise from the airport. The long-term operational noise from the transmission line would not be higher than existing ambient noise sources surrounding the airport and roads. The noise may be higher due to short-term construction work activities.

Being a power line project, the proposed Project would not result in the construction of occupied structures that would result in an increase in the number of people residing or working in proximity to the Riverside Municipal Airport. Therefore, the proposed Project would not result in people residing or working in the area being exposed to excessive noise levels.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

There are no private airstrips in the Project area; therefore, this would be no impact.

4.5 EIR AND REPORT IMPACT CRITERIA CONSISTENCY

As stated in Section 1.1, one of the purposes of this Report is to update the current noise analysis contained in the EIR, dated October 23, 2012, and as provided on the CPUC website. For applicable noise regulations and standards with respect to impact assessment and significance determination, the EIR considered:

- U.S. Environmental Protection Agency guidelines relating to AN, which recommend that the L_{dn} be limited to 55 dBA outdoors and 45 dBA indoors.
- California Administrative Code guidelines for evaluating the compatibility of various land uses as a function of community noise exposure.
- Riverside County General Plan, Noise Element, Land Use Compatibility for Community Noise Exposure Table. Single-family residential land uses are considered “normally acceptable” for noise levels up to 60 dBA CNEL.
- County Ordinance No. 847 providing a construction-related exception to the county sound level standards, if an application for a construction-related exception has been filed and approved by the County's Director of Building and Safety. Ordinance 847 exempts facilities and capital improvement projects of a governmental agency.

- City noise/land use compatibility guidelines, outlined in the City's General Plan Noise Element Noise/Land Use Compatibility Criteria. Single-family residential land uses are considered acceptable for noise levels up to 60 dBA CNEL.
- The City of Riverside's Noise Ordinance limiting construction activities to the hours of 7 a.m. to 7 p.m. on weekdays, and to 8 a.m. to 5 p.m. on Saturdays.
- The CEQA Guidelines provide thresholds of significance for noise.
- A significant permanent increase is defined as a direct Project-related permanent ambient increase of 5 dBA CNEL or greater.
- A substantial temporary increase in ambient noise levels is defined as a direct Project-related increase of 10 dBA L_{eq} or greater.

To update the applicable noise regulations of the EIR noise section, the Report considered the regulations above contained in the EIR, and also considered:

- Caltrans vibration level thresholds for architectural and structural damage and human perception thresholds.
- CPUC sole and exclusive state jurisdiction over the siting and design of the proposed Project, pursuant to CPUC General Order 131-D, Section XIV.B.
- The City of Norco noise ordinance limits construction activities to the hours of 6:30 a.m. to 7 p.m. on weekdays, and exterior sound level limits for residential classifications 55 dBA (daytime)/45 dBA (night time).
- The County and the City of Jurupa Valley noise ordinances exempting construction noise from private construction projects located within one-quarter mile from an inhabited dwelling, and within one-quarter mile from an inhabited dwelling, provided construction occurs exemption from otherwise applicable daytime and nighttime thresholds to between the hours of 6 a.m. to 6 p.m. during the months of June through September, and 7 a.m. to 6 p.m. during the months of October through May.
- County and the Cities of Jurupa Valley and Norco noise ordinances limiting maximum noise levels from stationary noise sources at the property line of a sensitive receptor to below 45 dB during nighttime hours (10:00 p.m. to 7:00 a.m.) and are not to exceed 55 dB during daytime hours (7:00 a.m. to 10:00 p.m.).

In summary, and as the subsequent Impact Analysis section illustrates, this Report assesses potential noise impacts in a manner that emulates what is presented in the EIR, with

consideration of additional regulations and standards reflecting what are relevant and applicable to the Project as of this writing.