4.11 Noise and Vibration

This section describes the environmental and regulatory settings and discusses potential impacts associated with the construction and operation of the South Orange County Reliability Enhancement Project (proposed project) with respect to noise conditions. During scoping, comments were received from members of the public concerning noise that would be generated during construction, the potential effects of noise on nearby businesses and the Bella Collina Towne & Golf Club, and the impacts of corona noise on residents. These concerns are addressed in this section.

4.11.1 Environmental Setting

The proposed project would be located primarily in regions of southern Orange County and the unincorporated area of northwestern San Diego County, on land owned and under the jurisdiction of the United States Marine Corps within its Camp Pendleton base. The overall project area is characterized by valleys, canyons, and hills between United States Marine Corps land at Marine Corps Base Camp Pendleton and the city of San Juan Capistrano. Existing land uses within the proposed project area include residential, recreation (golf courses), solid waste disposal (landfill), open space areas and parkland, a public transportation railroad line, and major roads and highways.

4.11.1.1 Noise and Vibration Fundamentals

Sound is a pressure wave transmitted through the air and is measured by decibels (dB), frequency of pitch, and duration. Because the human ear can detect a large range of intensities, the dB scale is based on multiples of 10, according to the logarithmic scale. Each interval of 10 dB indicates a sound energy level 10 times greater than the previous level and is perceived by the human ear as being roughly twice as loud. It is widely accepted that the average human ear can perceive changes of 3 dBA, and a change of 5 dBA is readily perceptible. Noise is defined as objectionable or unwanted sound.

To account for the fact that human hearing does not process all frequencies equally, an A-weighted (dBA) scale was developed. The dBA scale deviates from the "linear" dB weighting curve appropriately for specific frequency values. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise. Table 4.11-1 shows the relationship of various noise levels to commonly experienced noise events.

Noise level descriptors are commonly used to characterize the average ambient noise environment in a given area. The Sound Equivalent Level, or L_{eq}, is generally used to characterize the average sound energy that occurs during a relatively short period of time, such as an hour. Two other descriptors, the Day-Night Level (L_{dn}) and Community Noise Equivalent Level (CNEL), are used for an entire 24-hour period. The value of the L_{dn} and CNEL are generally within 1 dB of each other and therefore are often used interchangeably in noise analysis. Both the L_{dn} and CNEL noise level descriptors are used to place a stronger emphasis on noise that occurs during nighttime hours (10 p.m. to 7 a.m.) by applying a 10-dB "penalty" to those hours, but the CNEL also applies a 5-dB "penalty" to the evening hours of 7 p.m. to 10 p.m.

Table 4.11-1 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 1,000 feet (300 meters)	100	
Gas lawn mower at 3 feet (1 meter)	90	
Diesel truck at 50 feet, at 50 mph (80 km/h)	80	Food blender at 3 feet
Noisy urban area, daytime gas lawn mower at 100 feet	70	Vacuum cleaner at 10 feet
Commercial area heavy traffic at 300 feet	60	Normal speech at 3 feet
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 2009
Key:
dBA = A-weighted decibels
km/h = kilometers per hour
mph = miles per hour

Sound from a small localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates or drops off at a rate of 6 dBA when the distance is doubled. Natural terrain features such as hills and dense woods, as well as fabricated features such as buildings and walls, can alter noise levels. Wind, temperature, and other atmospheric effects could also alter the path of sound.

Vibration

Another community annoyance related to noise is vibration. As with noise, vibration can be described by both its amplitude and frequency. Vibration can be felt outdoors, but the perceived intensity of vibration impacts is much greater indoors, due to the shaking of structures. Factors that influence levels of ground-borne vibration and noise are the vibration source; soil conditions (type, rock layers, soil layering, and depth of water table); and factors related to the vibration receiver (foundation type, building construction, and acoustical absorption). Human response to vibration is difficult to quantify because vibration can be perceived at levels below those required to produce any damage to structures. Table 4.11-2 shows common human and structural response to vibration levels.

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Vibratory motion is commonly described by identifying peak particle velocity (PPV), which is generally accepted as the most appropriate descriptor for evaluating building damage. However, human response to vibration is usually assessed using amplitude indicators (root-mean square) or vibration velocity levels measured in inches per second or in decibels (VdB). The background velocity level in residential areas is usually 50 VdB, and the human threshold of perception is 65 VdB. Special care also should be taken when vibration occurs close to historically important structures and very sensitive manufacturing or research equipment. Historical structures usually require lower vibration limits. High-resolution electronic equipment is also typically sensitive to vibration (FTA 2006).

Table 4.11-2 Human and Structural Response to Typical Levels of Vibration

Human/Structural Response	Vibration Velocity Level (VdB)[a]	Typical Sources
Threshold, minor cosmetic damage to fragile buildings	100	Blasting from construction projects
Difficulty with tasks (e.g., reading a screen)	90	Bulldozers and other heavy tracked construction equipment
Residential annoyance, transient events	80	Commuter rail, upper range
Residential annoyance, continuous events	70	Rapid transit, typical
Human threshold of perception and limit for vibration sensitive equipment	65	Bus or truck, typical
No human response	50	Typical background vibration

Source: FTA 2006
Key:
VdB = decibels of vibration velocity
Notes:
[a] Root-mean square vibration velocity level in VdB is equivalent to 10^{-6} inches per second.

4.11.1.2 Existing Noise Levels

San Diego Gas & Electric Company (SDG&E, or the applicant) measured background noise levels at several proposed project component locations, including four locations near Capistrano Substation, as well as Transmission Line Poles 8, 11, 28, and 29. A summary of these noise measurements is provided in Table 4.11-3. The L_{eq} indicates all the sounds recorded over a specified time period. Maximum sound level (L_{max}) and minimum sound level (L_{min}) refer to the maximum and minimum sound levels recorded during the same time period.

Table 4.11-3 Applicant's Noise Surveys Results

Site ID	Location	Start Time	Duration (Minutes)	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)	Noise Sources
ST-1	North of Capistrano Substation	10:06 a.m.	15	52.0	70.8	43.9	• Car and truck vehicle movements on the adjacent Camino Capistrano roadway, local side streets, and the I-5 freeway to the east • General urban noises in the neighborhoods (music, talking, tools, church bells, etc.) • Birds (during the daytime) and crickets (during the evening and late-night hours) • Dogs barking • Substation transformer hum (depending on location, conditions, and other sources) • Occasional rustling of vegetation during periods of light winds • Occasional train pass-by on the Amtrak line across Camino Capistrano
		4:40 p.m.		65.5	82.7	43.0	
		10:04 p.m.		47.3	50.9	42.9	
		3:31 a.m.		43.8	48.0	40.5	
ST-2	Northwest Corner of Junipero Serra Park	11:10 a.m.		55.8	76.8	42.4	
		3:57 p.m.		54.5	72.8	47.2	
		8:12 p.m.		54.0	67.1	49.5	
ST-2	Northwest Corner of Junipero Serra Park	3:07 a.m.		44.4	54.4	38.0	
ST-3	At Junipero Serra Park Sign along Calle Santa Rosalia	11:28 a.m.		52.2	62.5	48.1	
		3:34 p.m.		52.3	63.0	49.3	
		9:15 p.m.		51.9	66.0	46.5	
		2:49 a.m.		46.5	53.6	40.7	
ST-4	Calle Bonita and Via El Rosario	11:48 a.m.		54.8	62.5	48.1	
		4:17 p.m.		56.2	71.3	45.5	

Table 4.11-3 Applicant's Noise Surveys Results

Site ID	Location	Start Time	Duration (Minutes)	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)	Noise Sources
		10:31 p.m.		50.5	66.7	44.4	• Occasional aircraft overflights in the distance
		2:26 a.m.		44.7	62.9	39.1	
Pole 8*	Arroyo Park near Pole 8	8:59 p.m.		50.7	54.8	47.5	• Vehicle movements on distant roadways (e.g., I-5 freeway, Ortega Highway, San Juan Creek Road, and Calle Saluda) • Occasional dogs barking or other wildlife (i.e., coyotes) in the distance • Occasional rustling of vegetation during periods of very light winds (at Pole No. 8 only) • Infrequent train movements in the distance • Residential equipment (e.g., pool pumps or water features) in the distance
Pole 11*	Residences on Juliana Farms Road near Pole 11	9:59 p.m.		49.7	54.2	45.0	
Pole 28*	Residences on Avenida Fresas near Pole 28	10:39 p.m.		36.4	50.3	30.1	
Pole 29*	Residences on Avenida Fresas near Pole 29	10:56 p.m.		30.5	40.3	25.6	

Source: Alliance Acoustical Consulting Inc. 2012.
* Corona noise measurement.
Note: Capistrano Substation measurements were taken on Wednesday, June 9, 2010, and Thursday, June 10, 2010. Corona measurements were taken on Saturday, January 14, 2012.
Key:
dBA = A-weighted decibels
I-5 = Interstate 5
ID = identification
L_{eq} = Sound equivalent
L_{max} = maximum sound level
L_{min} = minimum sound level
ST = substation

4.11.1.3 Sensitive Receptors

Human response to noise and vibration varies by individual person, the setting, and the activity in which a person is involved while exposed to unwanted sound. Noise and vibration-sensitive receptors can be defined as locations where people reside or where the presence of unwanted sound or vibration could adversely affect the designated land uses. Noise receptors in the project area that are considered sensitive are schools (Table 4.8-2 in Section 4.8, "Hazards and Hazardous Materials" provides a list of nearby schools), places of worship, parks, hospitals, and residences located within 0.5 mile of one of the project components. The closest noise and vibration sensitive receptors to the proposed project components are listed in Table 4.11-4.

For the purpose of this analysis, distances to the closest receptors in urban areas were determined by measuring the shortest distances to residential structures, schools, hospitals, and other receptors and proposed project component locations on recent aerial imagery. Table 4.11-4 is not intended to provide a full inventory of sensitive receptors, but rather to show the worst case scenario in terms of proximity to sensitive areas for each project component. In addition, Table 4.11-4 includes land use designations in order to identify the applicable noise and vibration standard to each sensitive receptor.

Table 4.11-4 Closest Noise Sensitive Receptors to Proposed Project Components

Project component	Closest Noise Sensitive Receptor	Jurisdiction	Land Use Designation	Distance (feet)
San Juan Capistrano Substation	Residences on Paseo Mar Azul	City of San Juan Capistrano	Medium High Density Residential	18
Talega Substation	Residences along Christianitos South Trail	City of San Clemente	Talega Specific Plan	1,355
Transmission Segment 1a				
Transmission work inside Capistrano Substation	Residences on Paseo Mar Azul	City of San Juan Capistrano	Medium High Density Residential	18
Overhead 138-kV Line	*Community center/recreation area*		Open Space Recreation	0*
Underground 138-kV Line	*Community center/recreation area*		Open Space Recreation	0*
Transmission Segment 1b				
Transmission work inside Capistrano Substation	Residence on Calle Santa Rosalia	City of San Juan Capistrano	Medium High Density Residential	18
Overhead 230-kV Line	*Junipero* Serra Park and Arroyo Park		Neighborhood Park	0[a]
	Marbella Country Club		Open Space Recreation	0[a]
Underground 230 –kV Line	Residence at the intersection of Via Zamora and Via Pamplona		Planned Community	40
Overhead 138-kV Line	*Junipero* Serra Park		Neighborhood Park	0[a]
Transmission Segment 2				
Underground 230-kV Line	San Juan Hills High School	City of San Juan Capistrano	Planned Community	10
Transmission Segment 3				
Overhead 230-kV Line	Residence on Via Cartaya	City of San Clemente	Talega Specific Plan	45
Transmission Segment 4				
Overhead 230-kV Line	Bella Collina Towne & Golf Club	City of San Clemente	Rancho San Clemente Specific Plan	230
Overhead 138-kV Line	Bella Collina Towne & Golf Club		Rancho San Clemente Specific Plan	496
Underground 138-kV Line	Bella Collina Towne & Golf Club		Rancho San Clemente Specific Plan	275
Overhead 69-kV Line	Bella Collina Towne & Golf Club		Rancho San Clemente Specific Plan	270
Underground 69-kV Line	Bella Collina Towne & Golf Club		Rancho San Clemente Specific Plan	250
Transmission work inside Talega Substation	Residences along Christianitos South Trail		Talega Specific Plan	1,355
Distribution Line Segment A				
Underground Getaways West of San Juan Capistrano Substation	*Community center/recreation area*	City of San Juan Capistrano	Open Space Recreation	0[a]
Distribution Line Segment B				
New Underground Lines South and East of San Juan Capistrano Substation	*Junipero* Serra Park	City of San Juan Capistrano	Neighborhood Park	0[a]

Table 4.11-4 Closest Noise Sensitive Receptors to Proposed Project Components

Project component	Closest Noise Sensitive Receptor	Jurisdiction	Land Use Designation	Distance (feet)
Distribution Line Segment C				
New Overhead Line Across Interstate 5	*Junipero* Serra Park	City of San Juan Capistrano	Neighborhood Park	0[a]
Distribution Line Segment D				
New Underground Line along Rancho Viejo Road	Marbella Country Club	City of San Juan Capistrano	Open Space Recreation	70
Distribution Line Segment E				
New Cable in Existing Underground Conduit along Rancho Viejo Road	Zoe Church (Rancho Viejo Road and Calle De La Rosa)	City of San Juan Capistrano	Planned Community	95
Distribution Line Segment F				
Existing Underground Conduit and Conductor along Highway 74	Residences along south-southeast side of Highway 74 between La Novia Avenue and Avenida Siega	City of San Juan Capistrano	Medium High, Medium, and Medium Low Density Residential	50
Distribution Line Segment G				
New Underground Conduit along Avenida La Pata	Residence west of Antonio Parkway	County of Orange	Suburban Residential	2,347
Distribution Line Segment H				
New Overhead Distribution Line along Avenida La Pata	San Juan Hills High School	City of San Juan Capistrano	Planned Community	625
Distribution Line Segment I				
Existing Underground Conduit from Avenida La Pata to Vista Montana	San Juan Hills High School	City of San Juan Capistrano	Planned Community	600
Distribution Line Segment J				
Removal of Underground Line along Vista Montana	Residence at Intersection of Via Pamplona and Via Zamora	City of San Juan Capistrano	Planned Community	75
~~**Distribution Line Segment K**~~				
~~Existing Underground Line Removal along Avenida La Pata~~	~~Residence at Via Zamora and Via Granada~~	~~City of San Juan Capistrano~~	~~Planned Community~~	~~646~~
~~**Distribution Line Segment L**~~				
~~New Overhead Line along Avenida La Pata to Prima Deschecha Landfill~~	~~Residence at eastern end of Paseo Palmar~~	~~City of San Juan Capistrano~~	~~Planned Community~~	~~704~~
Distribution Line Segment M				
New underbuild on existing structures	Residence at intersection of Christianitos South Trail and Avenida Pico	County of Orange	Open Space	779

Sources: Google Earth 2014; City of San Juan Capistrano 2014; City of San Clemente 2014,; County of Orange 2005.
Key:
kV = kilovolt
Notes:
[a] Intersected by a component of the project.

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4.11.2 Regulatory Setting

4.11.2.1 Federal

There are no federal noise standards that directly regulate environmental or community noise. Regulating noise is generally a responsibility of local governments. However, several federal agencies have developed community noise guidelines.

The United States Environmental Protection Agency (EPA) published guidelines on recommended maximum noise levels to protect public health and welfare with adequate margins of safety. A noise level of 70 dBA equivalent sound level over a 24-hour period was identified as the level of environmental noise that could lead to hearing loss over a 40-year period (EPA 1978). In addition, noise levels of 55 dBA L_{dn} outdoors and 45 dBA indoors were identified as noise thresholds that would prevent activity interference or annoyance (FTA 2006). Workers' exposure to noise is regulated by the federal occupational noise regulations established by the Occupational Safety and Health Administration in 29 Code of Federal Regulations1910.95.

In regard to groundborne vibration and groundborne noise, agencies such as the Federal Transportation Administration (FTA) and the U.S. Bureau of Mines have extensively studied the effects of ground vibration and damage on structures. The FTA has established construction vibration damage criteria of 0.12 inches per second (PPV) or 90 VdB for buildings extremely susceptible to vibration damage.

4.11.2.2 State

There are no statewide regulations that address noise impacts; however, the state requires local governments to perform noise surveys and implement a noise element as part of its General Plan (OPR 2003), as established in the California Government Code Section 65302(f). In addition, the state recommends interior and exterior noise standards by land use category and standards for the compatibility of various land uses and noise levels.

4.11.2.3 Regional and Local

As described in Table 4.11-4, the proposed project components would be located within multiple jurisdictions. Community noise applicable plans and regulations addressed by each of these local governments are described in the following sections.

Orange County

The Orange County Code of Ordinances, Title 4 – Health, Sanitation, and Animal Regulations, Division 6 – Noise Control provides noise standards for incorporated and unincorporated areas of the County (Sec. 4-6-4). The exterior noise standard for all residential property is 55 dBA between the hours of 7:00 a.m. and 10:00 p.m. and 50 dBA from 10:00 p.m. to 7:00 a.m. during any day of the week (Sec. 4-6-5). The County provides exemptions to this ordinance for noise sources associated with construction, repair, remodeling, or grading provided the activities do not take place between 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday. Therefore, this standard would apply to all construction activities occurring in Orange County.

The County of Orange General Plan (2005) Chapter VIII Noise Element specifies exterior noise standards for various land use types, including land use deemed sensitive to noise (e.g., residences, hospitals, rest homes, convalescent hospitals, places of worship, and schools). A CNEL of 65 decibels is

required for outdoor living areas. This CNEL level is only applicable to permanent sources operating in the proximity of sensitive land uses. Therefore, this Noise Element would apply to the operation of Talega Substation

City of San Juan Capistrano

The City of San Juan Capistrano Noise Ordinance has exterior noise standards for residential and non-residential land uses that are applicable to the proposed project. Table 4.11-5 provides the allowable exterior noise levels for residential, commercial, and institutional uses. Table 4.11-6 provides additional specificity for the duration of allowable noise levels. These standards are applicable to proposed project operations (substation, transmission, and distribution line segments) within the city of San Juan Capistrano. Exempted from these restrictions are: noise sources associated with construction, repairs, remodeling, or the grading of any real property, provided that such activities are conducted from 7:00 a.m. to 6:00 p.m. on Monday through Friday or from 8:30 a.m. to 4:30 p.m. on Saturday. Construction noise is not allowed at any time on Sunday or on a national holiday.

Table 4.11-5 City of San Juan Capistrano Exterior Noise Standards

Zone	Sound Level (dBA)	Time
Residential & Institutional Districts	65	7 a.m.– 7 p.m.
Residential & Institutional Districts	55	7 p.m. – 10 p.m.
Residential & Institutional Districts	45	10 p.m. – 7 a.m.
Commercial Districts	65	Any time

Source: City of San Juan Capistrano Municipal Code Sec. 9-3.531.
Key:
dBA = A-weighted decibel

Table 4.11-6 City of San Juan Capistrano Maximum Levels of Noise Exposure for Residential, Institutional, and Commercial Uses

Maximum Time of Exposure	Noise Metric	Noise Level not to be Exceeded (dBA)		
		7 a.m. to 7 p.m.	7 p.m. to 10 p.m.	10 p.m. to 7 a.m.
30 Minutes/Hour	L_{50}	65	55	45
15 Minutes/Hour	L_{25}	70	60	50
5 Minutes/Hour	$L_{8.3}$	75	65	55
1 Minute/Hour	$L_{1.6}$	80	70	60
Any Period of Time	L_0/L_{max}	85	75	65

Source: City of San Juan Capistrano Municipal Code Sec. 9-3.531.
Key:
dBA = A-weighted decibel
L_{50} = noise standard for a cumulative period of more than 30 minutes in any hour
L_{25} = noise standard for cumulative period of more than 15 minutes in any hour
$L_{8.3}$ = noise standard for cumulative period of more than 5 minutes in any hour
$L_{1.6}$ = noise standard for cumulative period of more than 1 minute in any hour
L_0/L_{max} = noise standard for any period of time

City of San Clemente

The City of San Clemente Municipal Code, Chapter 8.48, "Noise Control," contains several sections that address noise policy, definitions, exterior and interior standards, measurement procedures, and exceptions. Much like the County of Orange Ordinance, the City of San Clemente Municipal Code establishes allowable exterior and interior noise levels, based on the land use, time of day, and the portion of any hour that the noise source of concern is observed. Table 4.11-7 lists the allowable exterior noise levels as prescribed by Section 8.48.050 of the San Clemente Municipal Code. These standards

shall not be exceeded by the levels and periods of time identified in Table 4.11-8 for the land uses applicable to the proposed project.

Table 4.11-7 City of San Clemente Allowable Exterior Noise Limits

Noise Condition	Daytime Sound Level 7:00 a.m. to 10:00 p.m. (dBA)	Nighttime Sound Level 10:00 p.m. to 7:00 a.m. (dBA)
Residential	55	50
Residential portions of mixed-use, or residences located on property zoned for commercial, industrial or manufacturing land use	60	50
Commercial	65	60
Industrial or Manufacturing	70	70
Noise occurring less than 1 minute per hour	+20	+20

Source: City of San Clemente Municipal Code Section 8.48.050 and 8.48.060
Key:
dBA = A-weighted decibel

Table 4.11-8 City of San Clemente Maximum Levels of Noise Exposure for Residential Uses

Maximum Time of Exposure	Noise Metric	Noise Level not to be Exceeded (dBA)			
		Residential		Mixed-Use Residential	
		7 a.m. to 10 p.m.	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
30 Minutes/Hour	L_{50}	55	50	60	50
15 Minutes/Hour	L_{25}	60	55	65	55
5 Minutes/Hour	$L_{8.3}$	65	60	70	60
1 Minute/Hour	$L_{1.6}$	70	65	75	65
Any Period of Time	L_0/L_{max}	75	70	80	70

Source: City of San Clemente Municipal Code, Chapter 8.48.
Key:
dBA = A-weighted decibel
L_{50} = noise standard for a cumulative period of more than 30 minutes in any hour
L_{25} = noise standard for cumulative period of more than 15 minutes in any hour
$L_{8.3}$ = noise standard for cumulative period of more than 5 minutes in any hour
$L_{1.6}$ = noise standard for cumulative period of more than 1 minute in any hour
L_0/L_{max} = noise standard for any period of time

Exemptions from these standards that are applicable to the proposed project include the following:

- Noise sources associated with construction activity, provided the activities take place only between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday, between the hours of 8:00 a.m. and 6:00 p.m. on Saturday, and at no time on a Sunday or a City-recognized holiday, and provided that all grading activities also comply with Section 15.36.190 of the City's Municipal Code regarding time of grading operations.
- Noise sources associated with the maintenance of real property provided said activities take place only between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday, except on a City-recognized holiday, or between the hours of 8:00 a.m. and 6:00) p.m. on Saturday, Sunday or a City-recognized holiday.
- Activities of the federal, state, or local government and its duly franchised utilities.

- Activities necessary to continue to provide utility services to the general public, whether this service is installing additional facilities, restoring worn or damaged facilities, and/or maintaining existing services.

Since the proposed project would involve installing additional facilities to provide utility services to the general public, the construction activities proposed within the City of San Clemente would be exempted from the exterior noise standards. Operational activities would be subject to the standards presented in Tables 4.11-9 and 4.11-10, while maintenance activities would be excepted if they take place within the days and times indicated above.

Table 4.11-9 Maximum Noise Emission Levels from General Construction Equipment

Equipment	Maximum Noise Level at 50 feet from source (L_{max}, dBA)
Air Compressor	81
Auger Drill Rig	84
Backhoe	80
Boring Jack Power Unit	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Excavator	81
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Rock Drill	98
Roller	74
Saw	76
Scarifier	83
Scraper	89
Truck	88

Source: FHWA 2006
Key:
dBA = A-weighted decibels
L_{max} = maximum sound level

Table 4.11-10 Estimated Construction Noise Estimates per Project Component

Project Component	Noisiest Activity	Closest Sensitive Receptor	Distance to Closest Receptor Property Line (feet)	Estimated Combined Noise at Receptor (dBA, L_{eq})	Applicable Daytime Noise Standard (dB)	Applicable Nighttime Noise Standard (dB)
Substations						
San Juan Capistrano Substation	Above grade construction	Residences on Paseo Mar Azul	18	**101**	65	55
Talega Substation Modifications	Above grade construction	Residences along Christianitos South Trail	1,355	62	55	50
Transmission Lines						
Segment 1a	Removal of structures	Residences on Paseo Mar Azul	18	**96**	65	55
Segment 1b	Removal of structures	Residence on Calle Santa Rosalia	18	**96**	65	55
Segment 2	Removal of steel riser structures	San Juan Hills High School	10	**105**	65	55
Segment 3	Site grading/ access roads/ retaining walls	Residence on Via Villena	45	**93**	55	50
Segment 4	Site grading/ access roads/ retaining walls	Bella Colina Towne & Golf Club	230	**78**	55	50
Distribution Line Segments						
Segment A	Underground construction	*Community center/recreation area*	50[(a)]	**86**	65	55
Segment B	Underground construction	*Junipero* Serra Park	50[(a)]	**86**	65	55
Segment C	Overhead construction at each pole site	*Junipero* Serra Park	50[(a)]	**86**	65	55
Segment D	Underground construction	Marbella Country Club	70	**83**	65	55
Segment E	Underground construction	Zoe Church	95	**81**	65	55
Segment F	Underground construction	Residences along south-/southeast side of Highway 74	50	**86**	65	55
Segment G	Underground construction	Residence west of Antonio Parkway	2,347	53	55	50
Segment H	Underground construction	San Juan Hills High School	625	64	65	55
Segment I	Underground construction	San Juan Hills High School	600	65	65	55
Segment J	Removal of underground line	Residence at intersection of Via Pamplona and Via Zamora	75	**83**	65	55
~~Segment K~~	~~Underground construction~~	~~Residence at Via Zamora and Via Granada~~	~~646~~	~~64~~	~~65~~	~~55~~

Table 4.11-10 Estimated Construction Noise Estimates per Project Component

Project Component	Noisiest Activity	Closest Sensitive Receptor	Distance to Closest Receptor Property Line (feet)	Estimated Combined Noise at Receptor (dBA, L_{eq})	Applicable Daytime Noise Standard (dB)	Applicable Nighttime Noise Standard (dB)
~~Segment L~~	~~Overhead construction at each pole site~~	~~Residence at eastern end of Paseo Palmar~~	~~704~~	~~63~~	~~65~~	~~55~~
Segment M	Underground construction	Residence at intersection of Christianitos South Trail and Avenida Pico	779	**62**	55	50
Helicopter Fly Yards						
Staging Area 2	Helicopter ingress/egress to/from fly yard	Residence on Via Granada	1,500	58[(b)]	65	55
Storage area south of Margarita Substation	Helicopter ingress/egress to/from fly yard	Residence west of Antonio Parkway	640	**66**[(b)]	55	50
Storage area west of Rancho Mission Viejo Substation	Helicopter ingress/egress to/from fly yard	Residence east of Antonio Parkway (on Abarrola Street)	5,000	48[(b)]	55	50
Staging Area 5	Helicopter ingress/egress to/from fly yard	Residence at intersection of Christianitos South Trail and Avenida Pico	540	**67**[(b)]	55	50

Key:
dB = decibels
FAA = Federal Aviation Administration
L_{eq} = Sound Equivalent Level
Bolded font indicates the Estimated Combined Noise at Receptor
Notes:
[(a)] Transmission line construction in the Junipero Serra Park would require a six-week closure of Serra Park. It has been assumed that works crossing the community center/recreation area and other public recreational areas would also require access restrictions during construction. As a worst-case scenario, it has been assumed that the minimum distance to a sensitive receptor in public parks is 50 feet.
[(b)] Worst-case selected: helicopter maximum noise levels from a Sikorsky S61 hovering at 5 feet from the ground. Based on data published in FAA Report FAA-RD-77-57 (Helicopter Noise Measurements Data Volume II).

4.11.3 Impact Analysis

4.11.3.1 Methodology and Significance Criteria

Evaluation of noise and vibration impacts from the proposed project's construction, operation, and maintenance included the review of relevant city and county noise standards, as well as the existing noise environment within the proposed project area and the estimation of projected noise levels from equipment, vehicles, and activities. County and project maps and satellite images were reviewed to determine the distance of proposed project components to sensitive receptors. Based on the distance from each proposed project components and the closest sensitive receptors and the applicant's equipment list per project component, *predicted noise and vibration levels*—as perceived by the closest receptors—were estimated and compared with applicable standards, guidelines, and the criteria above to determine the significance of potential noise impacts.

Reference noise levels were obtained from the Federal Highway Administration (FHWA 2006) Roadway Construction Noise Model User's Guide, which provides a comprehensive assessment of noise level usage factors for construction equipment. Based on the list of equipment proposed for project construction, maximum noise emission levels were defined based on the reference values in the guide, and potential combined equipment levels at various distances were estimated. The noise levels generated by construction were analyzed using a construction noise model to determine projected noise levels at various distances and receptor locations during a typical hour of construction. The algorithm in the model considered construction equipment noise specification data, usage factors, and the relative distances of the noise sensitive receptor to the source of noise. Similarly, the vibration analysis was performed based on reference vibration levels obtained from the FTA (2006) Transit Noise and Vibration Impact Assessment, which provides reference vibration levels at 50 feet from typical construction equipment and impact criteria. Based on the FTA vibration impact assessment methodology and reference values at 50 feet from the source, potential vibration levels at various distances were estimated.

Potential noise and vibration impacts were evaluated according to the following significance criteria. The criteria were defined based on the checklist items presented in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The proposed project would cause a significant impact on visual resources if it would:

A. Expose persons to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

B. Expose persons to, or generate, excessive groundborne vibration or groundborne noise levels.

C. Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels that would exist without the project.

D. Cause a substantial temporary increase in ambient noise levels in the project vicinity above levels that would exist without the project.

Appendix G of the CEQA Guidelines also includes the following checklist items. The proposed project would cause a significant impact on visual resources if it would:

- Expose people residing near or working on the project to excessive noise levels, 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; and
- Expose people residing near or working on the project to excessive noise levels, for a project within the vicinity of a private airstrip.

The proposed project would not be located within an area subject to an airport's land use plans, nor are any of the project components located within 2 miles of any public or public use airports, or private airstrips. The closest airport in Orange County (John Wayne Airport) is located approximately 15 miles away from the proposed project, and the closest airport in San Diego County (McClellan-Palomar Airport) is located more than 20 miles away. In addition, as described in Section 2, "Project Description," airports that may be used for helicopter staging and landing zones for material pickup may include Oceanside Airport (located 26 miles away from Talega Substation); Palomar Airport (located 32 miles away from Talega Substation); and Gillespie Field Airport (located 55 miles away southeast of Talega substation).Therefore, these checklist items are not applied as criteria for the analysis of environmental impacts in this resource section.

4.11.3.2 Applicant Proposed Measures

The applicant has committed to the following Applicant Proposed Measure (APM) as part of the design of the proposed project. See Section 2.6, "Applicant Procedures, Plans, Standards, and Proposed Measures," for a complete description of each project commitment.

APM NOISE-1: Nighttime and Weekend Activities. Any endeavors during the construction phase wherein nighttime and/or weekend activities are necessary (such as due to Caltrans transportation constraints for conductor stringing (I-5) or oversized/ overweight loads or CAISO outage constraints) would be limited to the extent feasible so that noise would not exceed the pertinent maximum noise level limits or the hourly L_{50} limits when measured at the nearest residential property. For example, to minimize potential noise disturbances during nighttime deliveries of transformers, the applicant would make every reasonable effort to minimize the duration of trucking activities at the project site. This would entail pulling delivery vehicles onto the project site, parking them overnight, and unloading/installing the item(s) during normal, daytime construction hours. If nighttime or weekend activities cannot be conducted to meet the city's noise standards, SDG&E would communicate the exception to the appropriate local agency at least 24 hours in advance of conducting work that may exceed the threshold(s).

Additionally, the applicant would prepare and implement a Helicopter Life Plan as detailed in Section 2.4.6, "Helicopter Use." The Helicopter Lift Plan would include, among other sections, Project Helicopter Operations; General Use Restrictions and Regulatory Compliance; Landing Areas; Personal Protective Equipment; Landing Zone Limitations; Performance Planning and Weight and Balance; Fire Prevention Procedures; and Congested Area Plans.

4.11.3.3 Impact Discussion

Construction Noise Overview

Construction of the proposed project would take place over a total period of 64 months, as detailed in Table 2-6 in Section 2, "Project Description." Construction equipment operation, use of heavy-duty vehicles, grading and road work, foundation installation, horizontal directional drilling, underground construction, and helicopter use would be the primary sources of noise and vibration associated with construction for the proposed project components. Noise levels resulting from construction equipment are dependent on several factors, including the number and type of equipment operating, the level of operation, and the distance between sources and receptors. During a specific period of time, the loudest piece of equipment to be used during construction would contribute more to a composite average or equivalent site noise level than other equipment with quieter levels. General construction equipment and the typical noise levels associated with their use are presented in Table 4.11-9.

Heavy construction equipment typically generates noise levels up to approximately 95 dBA at a distance of 50 feet from the source. During a typical day, no equipment would be operated continuously at peak levels. While the average noise levels would represent a noticeable temporary increase in the ambient noise levels near the construction sites, the noise would attenuate with increasing distance, fading into the ambient noise background levels at distances over 0.5 miles from the loudest equipment. Generally, airborne noise decreases by 6 dBA with each doubling of the distance. Aside from general surface construction as described above, there would be underground construction. Noise sources associated with underground construction and the use of helicopters are described below.

Underground Construction

Construction of the new proposed underground transmission and distribution lines segments would involve the use of either open cut or jack and bore trenching techniques. These underground techniques would use noise- and vibration-generating equipment, including jackhammers, backhoes, augers, drilling machines, rigging trucks, road graders, rollers, vibration plates, bobcats, and generators, among other general equipment presented in Table 4.11-9. Maximum noise emission levels (L_{max}) for the equipment used during underground construction range from 80 to 89 dBA at 50 feet (FHWA 2006).

Helicopter Use

Depending on site accessibility, safety considerations, and the construction schedule, helicopters may be used to complete transmission line structure assembly and erection, wire stringing, and structure removal activities. Helicopters may also be used to transport crews and materials. Helicopters are not anticipated to be used for construction of 12-kilovolt (kV) distribution structures.

The following types of helicopters could be used during construction of the proposed project:

- *Heavy Duty (Type 1)*: Erickson Aircrane, Boeing CH-47, or similar helicopter models would be used for heavy lift operations with weights in excess of 11,000 pounds.
- *Medium Duty (Type 2)*: Sikorsky S-61, Bell 205/212, or similar helicopter models would be used for medium lift operations with weights ranging from 6,000 to 11,000 pounds.
- *Light Duty (Type 3)*: AS350, MD500, KMAX, or similar helicopters would be used for light lifts and for wire stringing and personnel transport.

Throughout the year, helicopters would be used for approximately 168 hours of rotor time to support the proposed 230-kV stringing activities. Helicopters would be used for additional periods as needed for structure installation and removal. Up to three helicopters may be used in a single day if wire stringing occurs along multiple transmission line sections on the same day that a helicopter is in use for pole removal and installation.

Helicopters would only be used during daylight hours, and helicopter flight paths would be limited to existing transmission line rights-of-way (ROWs) except for ingress to and egress from airports or helicopter fly yards. The applicant would prepare a Helicopter Lift Plan to minimize potential impacts caused by the use of a helicopter.

Helicopter noise perceived by people on the ground depends upon a number of variables, such as altitude, flyover speed and direction, and whether the helicopter is taking off or landing. Heavy duty (Type 1) helicopters, such as the Boeing CH-47, would produce a maximum sound level of 91 dBA while hovering at 5 feet from the ground and 97.5 dBA at 500 feet[1] (FAA 1977). Medium duty helicopters, such as the Sikorsky S61 would produce a maximum sound level of 95 dBA while hovering at 5 feet from the ground and 90.5 at 500 feet (FAA 1977). Light duty helicopters produce a maximum sound level of 75 dBA at a distance of 500 feet under level flight conditions (Nelson 1987).

Nighttime Construction

The applicant does not anticipate nighttime construction for the proposed substation, transmission lines, or 12-kV distribution lines. However, construction could occur at night and on weekends, especially during periods when the applicant switches from the old facilities to the proposed new facilities. Night and weekend work would be required to accommodate delivery of the transformers at the proposed San Juan Capistrano Substation. In addition, the delivery of oversized/overweight loads may also occur at night or on weekends.

If it should be necessary for construction to occur at night or on weekends, the applicant would limit such activities to the extent feasible so that noise would not exceed the applicable maximum noise level limits or the hourly L_{50} limits when measured at the nearest property residence. If nighttime or weekend activities cannot be conducted to meet the City noise standards, the applicant would communicate the exception to the applicable jurisdiction with a minimum of 24 hours prior to conducting the work that may exceed the thresholds.

Summary of Project-related Noise Levels

Table 4.11-10 shows the predicted noise levels from the noisiest construction activities as perceived at the closest sensitive receptors identified in Table 4.11-4, using the methodology described in Section 4.11.3.1. Detailed tables showing all noise estimates for each construction activity based on the applicant's equipment list are provided in Appendix N. In addition to the equipment to be used in construction sites, noise from trucks, commuter vehicles, and other on-road equipment would occur along streets and access roads in the project area, with estimated peak levels of approximately 88 dBA at 50 feet from the source (FTA 2006). Noise from vehicles and on-road equipment at closest sensitive receptors would vary depending on road conditions, traffic volume, speed, and presence of noise barriers.

For the purposes of this analysis, when a project component would be located in close proximity to recreational and residential or school receptors, it has been assumed that residences and schools would be

[1] Data measured by the Federal Aviation Administration with a microphone located 150 meters to the west of the centerline of the helicopter fly path, on existing surface.

more sensitive to construction noise than would recreational users. This assumption is based on the fact that access to parks that would be crossed by the proposed new transmission and/or distribution lines would be temporarily restricted; therefore, the exposure of recreational receptors to construction noise would occur over a shorter period of time compared to the exposure of a residential dweller or students and staff at schools. For estimation of noise levels at open space/recreational areas, it has been assumed as a worst-case scenario that the minimum distance to a sensitive receptor in public parks would be 50 feet.

Additionally, to evaluate noise from helicopter activities, it has been assumed as a worst case scenario that residences and schools would be more sensitive to noise from helicopters' ingress/egress and hovering at designated fly yards and construction sites compared to helicopter flyovers, since the latter occur in a shorter period of time.

Operations Noise Overview

The three potential sources of operational noise associated with the proposed project are: 1) corona noise from the 230/138-kV transmission lines segments; 2) transformer noise from San Juan Capistrano and Talega Substations; and 3) maintenance noise. These noise sources are discussed below.

Corona noise

The corona effect is the ionization of the air that occurs at the surface of the energized conductor and suspension hardware due to very high electric field strength at the surface of the metal during certain conditions. The corona discharge occurs at the conductor surface, representing a small dissipation of heat and energy in the form of local pressure changes that may result in noise or radio and television interference. The corona discharge occurs on most of transmission lines, but becomes more noticeable at higher voltages (345 kV and higher) and during wet and humid conditions. Under these conditions, noise during operation may be heard in the immediate vicinity of transmission lines and substation equipment, and this noise is generally characterized as a crackling or hissing sound that may be accompanied by a 120-hertz hum.

The proposed project would operate new or modified 230-kV and 138-kV transmission and 12-kV distribution lines, adding potential new corona noise sources in the area. The corona produced by a power line is a function of the conductor's condition, voltage, diameter, and elevation, and the local weather conditions. Corona noise is most noticeable when the conductor is wet, such as during rain or fog; however, during fair weather, insects and dust on the conductors can also contribute to this effect. Corona noise is also a function of the electromagnetic field at the surface of the conductor, which is not an issue of concern for underground lines; therefore, corona noise would not be noticeable along the proposed underground transmission and distribution lines segments. Additionally, due to the lower voltage associated with the proposed transmission, distribution, and telecommunication lines, corona noise is not anticipated to be audible for this project. ~~Corona noise from a similar 230-kV line loop in operation has been estimated using computer modeling and reported as 46.6 to 49.6 dBA during wet weather conditions and 21.6 to 24.6 dBA in fair weather within the transmission line ROW (PG&E 2010), which for the purposes of this analysis has been assumed at a minimum distance of 25 feet from the centerline. Table 4.11-11 shows the estimated corona noise reduction per distance based on the reference levels cited above.~~ The applicant conducted an audible noise analysis due to transmission line corona effect at three locations along the proposed 230-kV transmission segments (Power Engineers 2015). Results from this analysis show that corona noise is more prevalent during foul weather and would be 44 dBA, L50 at the edge of the proposed transmission segments ROWs (150 feet width for the proposed segments up to 350 feet when paralleling existing SCE transmission lines). Table 4.11-11

shows the calculated corona noise at the edge of the proposed segments ROW and the estimated noise reduction over distance.

~~**Table 4.11-11 Estimated Corona Noise Levels from 230-kV Transmission Lines Segments**~~

~~Reference Corona Noise Levels within ROW[a] (dB at 25 feet)[b]~~		~~Estimated Noise Reduction (dB) per Distance (Feet)~~			
		~~50~~	~~100~~	~~200~~	~~400~~
~~230-kV Line in Fair Weather~~	~~24.6~~	~~19~~	~~13~~	~~7~~	~~1~~
~~230-kV Line in Wet Weather~~	~~49.6~~	~~44~~	~~38~~	~~32~~	~~26~~

~~Key:~~
~~dB = decibels~~
~~kV = kilovolt~~
~~PG&E = Pacific Gas and Electric Company~~
~~ROW = right of way~~
~~Notes:~~
~~(a) Noise values reported by PG&E for 230 kV transmission lines experiencing corona activity, based on computer modeling results developed by the Bonneville Power Administration.~~
~~(b) Average distance from the 230 kV transmission centerline assumed as 25% of the total ROW width, or 25 feet.~~

Table 4.11-11 Calculated Corona Noise Modeling Results in Wet Weather (dBA, L50)

Reference Corona Noise Levels at the Edge of the Proposed 230-kV Transmission Segment ROW[a] (dBA[b])		Estimated Noise Reduction (dBA) per Distance from the Centerline (Feet)			
		100	200	300	400
Case 1: New 230-kV double-circuit transmission line paralleling a 12-kV transmission line	44.2	41.7	35.7	32.2	29.7
Case 2: New double circuit 230-kV transmission line paralleling an existing double circuit 138-kV structure	44.3	41.8	35.8	32.3	29.8
Case 3: New 230-kV double circuit transmission lines paralleling existing SCE transmission corridor adjacent to a housing development	43.1	40.6	34.6	31.1	28.6

Source: Power Engineers 2015
Key:
dB = decibels
kV = kilovolt
ROW = right-of-wayL50 = noise level exceeded for 50% of the measurement duration.
Notes:
(a) Results reported by Power Engineers and SDG&E based on audible noise modeling using the Bonneville Power Administration's Corona and Field Effects Program (CAFEP) software.
(b) For the purposes of this modeling, the applicant assumed that the SDG&W ROW width is 150 feet. When the proposed segments parallel existing SCE transmission lines, the ROW width extends an additional 200 feet.

Transformer Noise and Vibration

The transformer banks are anticipated to be the dominant operational noise and vibration source at substations. The proposed San Juan Capistrano substation would operate two 230/138-kV 352-megavolt ampere (MVA) transformers and three 138/12-kV 30-MVA transformers continuously, during daytime and nighttime hours. Both sets of transformers would be surrounded by 32- by 16-foot-tall firewalls and in the vicinity of metal-sided gas-insulated switchgear equipment buildings. Talega Substation currently houses two 230/138-kV 392-MVA transformers, one 230/138-kV 168-MVA transformer, one 230/138-kV 150-MVA transformer, and one 138/69-kV 25-MVA transformer.

Transformers emit a characteristic hum resulting from magnetostrictive forces that cause the core of the transformer to vibrate. In simple terms, a transformer core is made of multiple sheets of specially designed steel that extend and contract due to the flux of alternating current (i.e., become magnetized), producing noise and mechanical vibrations (Federal Pacific n.d.). In addition, transformer cooling fans produce semi-continuous noise. Oil pumps used to cool transformers during periods of high electrical demands also contribute to the operational noise at substations (McDonald 2007). The amount of noise generated by a transformer is generally fixed by design, and vibration is generally reduced by isolating the core and coils from the ground using anti-vibration pads (Federal Pacific n.d.).

It is anticipated that the substation transformers to be installed at the proposed San Juan Capistrano Substation would not exceed the values specified by the National Electrical Manufacturers Association (NEMA) Standards Publication No. TR-1-1993 (R2000): Transformers, Regulators, and Reactors. The NEMA Standards maximum sound levels applicable to the proposed project's oil-immersed transformers are 91 dB at 1 foot for ratings between 300 and 400 MVA, and 80 dB at 1 foot for ratings between 33 and 41 MVA (NEMA 2000). The transformer banks at the proposed San Juan Capistrano Substation would be surrounded by 32- by 16-foot-tall firewalls and additional metal structures and other buffer areas considered as part of the substation design. For the purposes of this analysis, it has been assumed that the presence of the 32- by 16-foot-tall firewalls would provide an additional 10 dB reduction (FHWA 2006). Table 4.11-12 shows estimated operational combined noise from transformers proposed at San Juan Capistrano Substation.

Table 4.11-12 Estimated Combined Transformer Noise Levels at the San Juan Capistrano Substation

Estimated Combined Sound Level (dB at 1 feet)[a]		Estimated Sound Level Reduction (dB) per Distance (feet)[b]						
		20	50	100	200	300	500	1000
230/138-kV 352 MVA Transformers (2 Units)	94	58	50	44	38	34	30	24
138/12-kV 30 MVA Transformer (3 Units)	85	49	41	35	29	25	21	15
ALL TRANSFORMERS (5 Units)	**94.5**	**58**	**51**	**44**	**38**	**35**	**31**	**24**

Key:
dB = decibels
kV = kilovolts
MVA = megavolt ampere
NEMA = National Electrical Manufacturers Association
Notes:
(a) Average sound level per Table 0-2 of the NEMA Standard Publication No. TR-1-1993 (R2000): Transformers, Regulators, and Reactors.
(b) Assumes 10-dB attenuation due to presence of 32- by 16-foot-tall firewalls per transformer bank proposed at San Juan Capistrano Substation.

Maintenance Noise

Maintenance activities would involve routine inspection and preventive maintenance to ensure service reliability and emergency work as needed to maintain or restore service. Maintenance activities at San Juan Capistrano and Talega substations would be short in duration (one week for annual maintenance). Maintenance activities on the transmission lines are primarily inspection-related and would occur at least once per year by driving and/or flying the line routes; therefore, helicopter and vehicle use would be primary noise sources during maintenance activities. Other maintenance activities include the inspection and repair of telecommunication components, which would occur once per year at each substation.

4.11.3.4 Environmental Impacts

Impact NV-1: Noise levels in excess of standards established in the local general plan or noise ordinance.
LESS THAN SIGNIFICANT WITH MITIGATION

As shown in Table 4.11-10, sensitive receptors located between 18 and 230 feet from the proposed construction sites would be exposed to construction noise levels in excess of the applicable exterior noise standards for residential uses described in Section 4.11.2.3. However, as shown in Table 4.11-13, the noise ordinances applicable at all jurisdictions where the project would be constructed have established exemptions for construction noise, if work is performed within daytime hours and specific timeframes.

Table 4.11-13 Construction Hours per Jurisdiction

Jurisdiction	Allowable Construction Hours
County of Orange	Weekdays: 7:00 a.m. to 8:00 p.m.
City of San Juan Capistrano	Weekdays: 7:00 a.m. to 6:00 p.m. Saturday: 8:30 a.m. to 4:30 p.m.
City San Clemente	Weekdays: 7:00 a.m. to 6:00 p.m. Saturday: 8:00 a.m. to 6:00 p.m.

The applicant anticipates that most of the construction required for the proposed substation, transmission lines, and distribution lines would occur during daytime hours Monday through Saturday. Therefore, under most conditions, construction would be conducted in compliance with local noise standards.

However, construction may occur at night and on weekends, when the applicant would shift from the use of old facilities to the proposed new facilities; during the delivery of the transformers; and during the delivery of other oversized/overweight loads (in compliance with Caltrans requirements). When nighttime hours and weekends are necessary, the applicant would implement APM NOISE-1 to limit such activities to the extent feasible so that noise would not exceed the pertinent maximum noise level limits or the hourly L_{50} limits established by the applicable city ordinance when measured at the nearest property residence. Since the proposed project has the potential to exceed the local applicable noise standards during certain construction activity proposed for nights and weekends, implementation of Mitigation Measure (MM) NV-1, described in Section 4.11.4 is required to ensure that the applicant obtains an authorization from the local jurisdiction prior to conducting works outside allowable construction hours, informs closest sensitive receptors with sufficient notice about construction works at night and on weekends, and conducts noise monitoring during such activities to ensure that pertinent noise exterior limits are not exceeded. With implementation of MM NV-1, impacts would be less than significant under this criterion.

Operation of the proposed project would result in an increase of ambient noise at some project locations due to transformer noise at San Juan Capistrano Substation and corona noise from overhead 230-kV transmission lines. As shown in Tables 4.11-11 and 4.11-12, the proposed project's operational sources would have the potential to exceed nighttime standards of 45 dBA only at receptors located less than 100 feet from the proposed San Juan Capistrano Substation site and less than 45 feet from the proposed overhead 230-kV transmission line segments operating during wet weather conditions.

Continuous operation of the San Juan Capistrano Substation would increase ambient noise levels as a result of transformer "hum" and cooling fan noise. During project operations, it is anticipated that five substation transformers would be installed at the proposed San Juan Capistrano Substation with estimated combined levels of 94.5 dBA at 1 foot. The transformer banks at the proposed San Juan

Capistrano Substation would be surrounded by 32- by 16-foot-tall firewalls and additional metal structures and additional buffer areas. The presence of walls and surrounding structures would provide additional noise attenuation, with a reduction effectiveness of 10 dBA (FTA 2006). Estimated operational noise levels and their attenuation over distance are shown in Table 4.11-12. However, actual transformer noise levels from the operation of San Juan Capistrano Substation would depend on final design and equipment selection.

Table 4.11-12 shows that the projected operational noise levels would exceed the City of San Juan Capistrano's exterior noise standards only for sensitive receptors located less than 100 feet from the 230/138-kV and 138/12-kV transformer banks at the proposed San Juan Capistrano Substation. Since the actual location of the proposed transformer banks and distances to closest sensitive receptors would depend on final project design, there is a potential for the proposed project to exceed the nighttime exterior noise standards set by the City of San Juan Capistrano from 10:00 pm to 7:00 a.m. MM NV-2 would require the applicant to ensure that the final substation layout includes appropriate setbacks for the 230/138-kV and 138/12-kV transformer banks. With implementation of MM NV-2, potential impacts from operational noise at San Juan Capistrano Substation would be reduced to less than significant under this criterion.

As shown in Table 4.11-3, the closest residential receptor to an overhead 230-kV transmission line is located in the city of San Clemente, 45 feet away from the proposed Segment 3 alignment. At this receptor, the estimated corona noise level during wet weather conditions would be 44 dBA, which would comply with the City of San Clemente's exterior noise standards. Corona noise associated with the operation of the 230-kV underground transmission lines, 138-kV transmission lines, and 12-kV distribution line segments is not anticipated to be generally audible and therefore would not be significant. Therefore, no significant impacts would occur during operation of the proposed transmission and distribution line segments under this criterion.

Operation of the modified Talega Substation would not produce additional noise compared to existing operations. The nearest residential receptors are located 1,355 feet away from Talega Substation. The projected transformer noise level as perceived by these receptors would be 21 dBA; operational source as perceived at this receptor would be in compliance with the County of Orange exterior noise standards. Therefore, there would be no impacts from Talega Substation operations under this criterion.

Maintenance activities would be sources of noise. Noise from maintenance activities would primarily result from routine inspection and maintenance of the substations and transmission and distribution lines. Noise sources would be vehicles, mobile equipment, and helicopters. Maintenance of the proposed project components may create short-term increases in noise at sensitive receptors located in the immediate vicinity of the work areas. However, maintenance would be infrequent, intermittent, and short term. The applicant would be required to comply with the City of San Juan Capistrano's requirements for cumulative noise exceedances over short periods of time. In addition, all maintenance to be performed within the City of San Clemente would be exempted from noise standards. Therefore, noise from maintenance activities would be less than significant under this criterion.

The applicant would be required to comply with the County of Orange, City of San Juan Capistrano, and City of San Clemente allowable timeframes for construction, exterior noise standards, and maximum cumulative noise level exceedances allowed for specific periods of times. To ensure compliance with the applicable noise ordinances during construction and operation, the applicant will be required to implement MM NV-1 and MM NV-2. Therefore, construction and operational noise impacts would be less than significant with mitigation under this criterion.

Impact NV-2: Excessive groundborne vibration or groundborne noise levels.
LESS THAN SIGNIFICANT WITH MITIGATION

Vibration could occur during construction or operations, but would primarily occur during construction. Construction vibration would occur mainly from the use of heavy-duty construction equipment (e.g., trucks, backhoes, excavators, loaders, and cranes), including those used for underground construction. Additional construction ground vibration sources include the tamping or compacting of ground surfaces, the passing of heavy trucks on uneven surfaces, the excavation of trenches, and jack and boring procedures, and these would also create perceptible vibration in the immediate vicinity of the proposed project construction sites. Vehicle and heavy duty truck use during the proposed project construction would generate a continuous but relatively low level of vibration. Typical vibration average source levels at 25 feet from construction equipment in VdB (human annoyance parameter) and PPV (structural damage parameter) are provided in Table 4.11-14. The groundborne vibration impact assessment criteria are identified in Table 4.11-15.

Table 4.11-14 Reference vibration source levels for project construction equipment

Equipment Type	Reference PPV (in/sec)	Vibration Level at Closest Receptors (VdB)				
	25 feet	25 feet	50 feet	100 feet	500 feet	1000 feet
Large bulldozer	0.089	87	78	69	39	21
Loaded trucks	0.076	86	77	68	38	20
Jackhammer	0.035	79	70	61	31	13
Small bulldozer	0.003	58	49	40	10	0
Vibratory roller	0.210	94	85	76	46	28

Source: FTA 2006.
Key:
PPV = peak particle velocity
VdB = vibration velocity levels measured in inches per second or in decibels
Note:
Vibration level at closest receptors estimated based on FTA's annoyance assessment for vibration-sensitive sites.

Table 4.11-15 Groundborne Vibration Impact General Assessment Criteria

Land Use Category	Impact Levels		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Residences and places where people normally sleep	72 VdB	75 VdB	80 VdB

Source: FTA 2006.
Key:
PPV = peak particle velocity
VdB = vibration velocity levels measured in inches per second or in decibels
Notes:
(a) Frequent events: more than 70 vibration events of the same source per day.
(b) Occasional events: between 30 and 70 vibration events of the same source per day.
(c) Infrequent events: less than 30 vibration events of the same kind per day.

The proposed project's heavy-duty equipment and vehicles would generate vibration levels range between 60 to 94 VdB (equivalent to 0 to 0.012 inches/second in a range of 1 to 100 hertz) during short-term construction activities. As shown in Table 4.11-10, operation of construction equipment causes ground vibrations that decrease in strength over distance (FTA 2006). Most construction activities would be restricted to daytime hours, and although construction would occur over a 64-month period,

construction at any one location would be short term (one to two weeks) at most of the proposed transmission and distribution line segment locations. As shown in Tables 4.11-14 and 4.11-15, most of the vibratory equipment to be used would generate levels noticeable for sensitive receptors located with 25 and 50 feet, except at underground construction sites where paving rollers would be used. The applicant anticipates that events involving maximum vibration levels would occur infrequently, that is, fewer than 30 vibration events of the same kind per day and during allowable construction hours, reducing potential impacts during the most sensitive times of the day.

As indicated in Table 4.11-4, residential receptors would be located 18 feet from the proposed San Juan Capistrano Substation site, within 50 feet from two underground transmission line segments, and within 100 feet from four of the proposed distribution line segments. The applicant would avoid nighttime construction to the extent feasible and would conduct underground construction near residential areas in short periods of time, resulting in infrequent events of maximum vibration. Since nighttime and underground construction would still occur in the proximity of residential areas, there is the potential to exceed existing groundborne vibration levels during these events. To reduce potential impacts of excessive vibration, implementation of MM-NV3 includes the development of a vibration monitoring plan during final design and the implementation of a compliance monitoring plan during construction. After implementation of the applicant's practices and MM-NV3, groundborne vibration impacts associated with the construction of the proposed project would be less than significant.

Groundborne vibration generated from the proposed project operations would be minimal and would result primarily from maintenance vehicles and equipment. In general, substations are designed to not generate perceptible vibration because vibration would damage substation equipment; transformers are typically built with anti-vibratory pads to reduce potential effects due to mechanical vibration. Groundborne vibration and groundborne noise associated with vehicles and heavy-duty equipment to be used during maintenance activities would be short term and would occur on an intermittent basis. Additionally, any potential vibration would occur during daytime hours. Therefore, operation of the project would result in a less than significant impact under this criterion.

Impact NV-3: Permanent increase in ambient noise levels in the project vicinity.
LESS THAN SIGNIFICANT WITH MITIGATION

Construction of the proposed project would not be permanent, although overall construction activities would last up to 64 months, resulting in a prolonged exposure to construction noise at specific work sites, such as San Juan Capistrano Substation. In the long term, operation of the proposed project would result in an increase of ambient noise at some locations due to transformer noise from the substation operations and corona noise from overhead 230-kV transmission lines. Corona noise associated with the operation of the 230-kV underground transmission lines, 138-kV transmission lines, and 12-kV distribution line segments is not anticipated to be generally audible and therefore would not be significant.

To analyze the potential permanent increase in ambient noise levels in the project vicinity, cumulative noise exposure criteria published by the FTA has been considered. Based on general community reactions to noise at varying levels, the FTA has published a cumulative noise level curve (Figure 4.11-1), which shows that for ambient noise levels such as those existing at the suburban locations, a noise exposure increase of more than 15 dB would result in a severe impact. Based on this methodology, in areas where the existing noise exposure is below or at 45 dBA, a noise exposure increase of less than 8 dBA would be noticeable but would be considered less than significant.

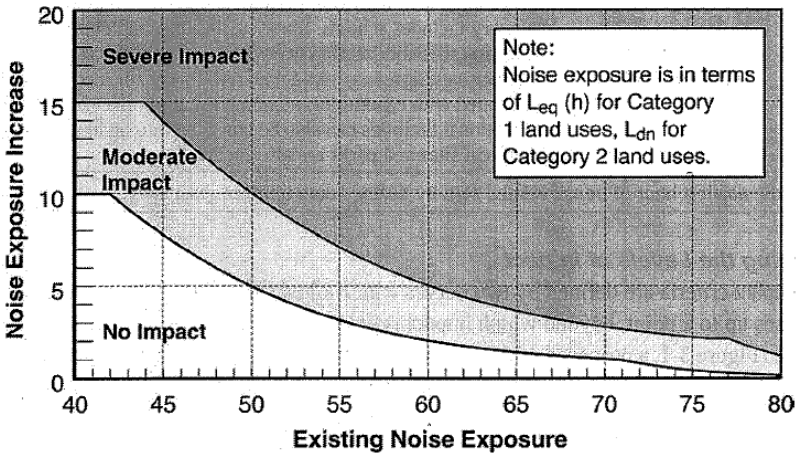

Figure 4.11-1 Increase in Cumulative Noise Levels Allowed by Criteria (dBA)
(Source: FTA 2006)

According to ambient noise measurements conducted by the applicant (Table 4.11-3), noise levels near the proposed San Juan Capistrano substation range between 44 dBA (lowest nighttime level) and 66 dBA (highest daytime level). Table 4.11-12 shows that operational noise from the proposed San Juan Capistrano Substation would not exceed ambient noise levels at receptors located more than 100 feet from the 230/138-kV and 138/12-kV transformer banks. Since the actual location of the proposed transformer banks and distances to closest sensitive receptors would depend on final project design, the proposed project has the potential to cause a permanent increase in ambient noise levels in the project vicinity. The applicant would build two 32- by 16-foot-tall firewalls surrounding each set of transformer banks, and this equipment would be located in the vicinity of metal-sided gas-insulated switchgear equipment buildings. In addition, as discussed in Impact NV-1, the San Juan Capistrano Substation nighttime operations would be required to comply with the City of San Juan Capistrano exterior noise standards, which have been established to ensure that cumulative exposure levels are below or equal to 45 dBA during the period of 10 p.m. to 7 a.m. Implementation of MM NV-2 would ensure that permanent nighttime operational noise levels would be below or equal to 45 dBA; therefore, the San Juan Capistrano Substation would result in a less than significant impact with mitigation under this criterion.

Operation of the modified Talega Substation would not produce additional noise compared to existing operations. The nearest residential receptors are located 1,355 feet away from Talega Substation. The projected transformer noise level as perceived by these receptors would be 21dBA; therefore, this project component would result in no impact under this criterion.

~~Corona noise associated with operation of the proposed 230-kV transmission line segments has been reported to be 46.6 to 49.6 dBA within the ROW during wet conditions, and 21.6 to 24.6 dBA in fair weather conditions.~~ As shown in Table 4.11-4, the closest residential receptor to the overhead 230-kV transmission line is a resident on Via Cartaya in the City of San Clemente, 45 feet away from the proposed Transmission Line Segment 3. The ~~estimated~~ calculated L50 ~~-~~corona noise level at this receptor during wet weather conditions would be greater than ~~44~~43.1 dBA (Table 4.11-11)~~,~~ and would exceed the FTA Cumulative Noise Levels Allowed by Criteria (Figure 4.11-1) for the~~. which would exceed~~ nighttime ambient noise levels reported for the project area (refer to Pole 29 in Table 4.11-3, which is the closest surveyed area to the resident on Via Cartaya). The proposed project has the potential to create corona noise that exceeds nighttime ambient noise levels during wet weather conditions. To reduce potential effects at receptors located less than 45 feet from the proposed 230-kV transmission line segments, implementation of MM NV-4 would provide additional reduction to potential increases of

ambient noise levels due to corona noise under wet conditions. With implementation of MM NV-4, impacts due to corona noise from 230-kV transmission line segment operations in wet weather would be less than significant under this criterion. Corona noise associated with lower voltages would not be audible.

Impact NV-4: Substantial temporary or periodic increase in ambient noise levels in the project vicinity.
LESS THAN SIGNIFICANT WITH MITIGATION

It is expected that noise levels from construction equipment and vehicle and helicopter use, would result in temporary contributions to the ambient noise levels in the project vicinity during the overall 64-month construction period. As shown in Table 4.11-9, potential noise levels during the proposed construction would range between 60 and 105 dBA at the nearest sensitive receptors. As shown in Figure 4.11-1, for areas with low ambient noise levels (i.e., 40 dBA), a noise exposure increase of more than 15 dB would result in a severe impact. Therefore, there would be a noticeable temporary increase in ambient noise levels for most of the proposed project construction sites.

Temporary increases in ambient noise levels would be noticeable near the construction sites; however, construction equipment would not be operated continuously at peak levels, and the noise would attenuate with increasing distance. Generally, airborne noise decreases by 6 dBA with each doubling the distance. It is expected that temporary noise increases from the proposed project construction would be more noticeable at quiet areas (ambient levels of 60 dBA or below) compared to work areas located close to major roadways, where ambient noise levels would typically be higher. To address potential impacts from temporary increases of ambient noise levels during construction, the applicant has committed to control nighttime construction (APM NOISE-1) and would minimize impacts caused by the use of helicopters through the preparation and implementation of a Helicopter Lift Plan (as described in Section 2.4.6 "Helicopter Use,") which would indirectly reduce noise at sensitive receptors in or near proposed landing and take-off sites. However, these are not the only sources of noise associated with project construction, and there are specific sites where construction activities would occur in a prolonged period of time, increasing the potential exposure of sensitive receptors to temporary increases of ambient noise, such as residential properties in the vicinity of the proposed San Juan Capistrano Substation.

As shown in Table 4.11-10, the noisiest construction activity to be performed at San Juan Capistrano Substation (above grade construction) would have a composite noise level of 101 dBA as perceived at the closest sensitive receptor property line (18 feet), resulting in an increase of 36 dBA compared to the daytime ambient noise levels reported in Table 4.11-3. Similarly, transmission and distribution line construction would produce an increase of over 20 dBA compared to ambient noise levels reported in Table 4.11-3[2]. In addition, construction activities that may occur at night and on weekends, when the applicant would shift from the use of old facilities to the proposed new facilities; during the delivery of the transformers; and during the delivery of other oversized/overweight loads also have the potential to exceed nighttime ambient noise levels. The applicant would implement APM NOISE-1 to reduce potential noise impacts during such nighttime activities. Although distance to the closest sensitive receptors would change during the construction period, these temporary increases in noise levels would create severe impacts on the existing ambient noise levels and would be noticeable and significant.

[2] Construction works that would be performed 10 feet away from the property line of the San Juan Hills High School would be in the proximity of the school baseball field instead of the school buildings. The school buildings would be a higher sensitive receptor. Actual class buildings would be located more than 500 feet from the proposed Segment 2 work sites; therefore, the estimated levels of 105 dBA for Segment 2 reported in Table 4.11-10 are not cited in this analysis.

Implementation of MM NV-1 and MM NV-5 would reduce potential noise impacts on residents located in close proximity of the proposed substation, transmission, and distribution lines segments to below severe levels (see Figure 4.11-1). Therefore, construction impacts would be less than significant with mitigation under this criterion.

Substation noise would not be expected to fluctuate during operation. Implementation of MM NV-2 would provide additional reduction of operational noise from the proposed San Juan Capistrano Substation, reducing the risk for temporary or periodic increases in ambient noise. Noise from the transmission line in fair and wet weather conditions would not exceed by more than 5 dBA the ambient noise levels reported in Table 4.11-3, except for two locations where ambient noise levels would be exceeded by more than 10 dBA during wet conditions. Since wet conditions are temporary in nature, implementation of MM NV-4 would provide additional reduction to potential increases of ambient noise levels at nearest sensitive receptors due to corona noise under wet conditions. With implementation of MM NV-4, potential temporary or periodic increases in ambient noise due to corona noise from 230-kV transmission line segment operations in wet weather would be less than significant under this criterion.

Maintenance activities would typically occur over a short timeframe, up to six times per year at substations. They would generate minimal noise. Maintenance activities on the transmission and subtransmission lines would be primarily for inspection and would occur at least once per year by driving and/or flying the line routes, resulting in a temporary increase of noise levels due to vehicle and helicopter use. However, noise from these sources would be limited and short-term at any one receptor that would be exposed to increased noise levels. Therefore, it can be concluded that inspection and maintenance activities would not expose sensitive receptors to excessive noise levels and impacts would be less than significant.

4.11.4 Mitigation Measures

MM NV-1 Nighttime and Weekend Construction Noise Controls. Before performing any construction activities required during periods of time not allowed by local ordinances (i.e., nighttime and weekends), the applicant will:

- Obtain authorization from the local jurisdiction where work will be performed (city or county, as applicable) prior to initiating work at night and on weekends;
- Notify occupants of the sensitive receptors properties located within 230 feet of the proposed work a minimum of one week prior to the potential activities and their anticipated duration;
- Ensure that noise levels will not exceed exterior noise standards of 55 dBA at the property boundary during the period of 6:00 p.m. to 10 p.m. and 45 dBA between 10 p.m. and 7 a.m.;
- Minimize the duration of trucking activities at work sites to less than 30 minutes, when feasible;
- Monitor noise levels during a cumulative period of more than 30 minutes in any hour (L_{50}) and maximum noise levels (L_{max}) at the nearest residential property boundary during the period when nighttime or weekend construction is performed;
- Report noise levels (hourly L_{50} and L_{max}) measured at the nearest residential property to the local jurisdiction (city or county, as applicable) and the California Public Utilities Commission (CPUC) within one week. Noise level measurements shall be conducted and reported in compliance with the City of San Juan Capistrano and City of San Clemente requirements, as applicable; and

- If nighttime or weekend activities cannot be conducted to meet the local ordinance exterior noise standards, the applicant will implement additional mitigation measures, such as:
  - Reducing trucking activities to shorter periods of time,
  - Using low noise electrical equipment,
  - Installing portable noise barriers surrounding the work sites, or
  - Offering potentially affected residents an alternative place to stay overnight or weekend, as necessary.

MM NV-2 Low-Noise Substation Equipment and Noise Barriers. The applicant will ensure that San Juan Capistrano Substation's operational noise levels will not exceed 45 dBA at the property boundary during the period of 10 p.m. to 7 a.m. This will be achieved by ensuring that the final substation layout provides sufficient setback between the proposed facilities and closest residential receptors, use of low-noise substation equipment, or installation of noise barriers in the perimeter of the proposed substation. The proposed 230-/138-kV and 138-/12-kV transformers will be located at a minimum distance of 100 feet away from the nearest residential property. ~~In addition to this minimum distance, the applicant will conduct monthly monitoring and reporting of operational noise levels at the substation during the first year of full operation.~~ The applicant will conduct a noise survey at the closest receptors to the substation once the substation is fully operational to confirm that sufficient measures have been implemented to reduce noise levels to 45 dBA at the property boundary. The applicant will submit the noise survey results to the CPUC.

MM NV-3: Construction Vibration Control Measures. The applicant will implement the following measures to reduce construction vibration at substations, transmission lines, distribution lines, and staging areas located within 100 feet from residential and other vibration-sensitive receptors:

- Route heavily loaded trucks away from residential streets, if possible. Select streets with fewest homes if no alternatives are available;
- Operate earth-moving equipment on construction sites as far away from residential and other vibration-sensitive receptors as possible;
- Phase earth-moving and ground-impacting operations so as not to occur in the same time period;
- Avoid night-time activities;
- Avoid the use of vibratory rollers near sensitive areas;
- Conduct pre-construction notifications sensitive receptors located within 100 feet of construction activities within 30 days prior to construction;
- Develop a construction vibration mitigation and monitoring plan during final project design to be reviewed and approved by the CPUC; and
- Implement a compliance monitoring program during construction to ensure implementation of vibration control measures.

MM NV-4. Corona Noise Reduction during Wet Weather Conditions. The applicant will ensure that the 230-kV transmission line corona noise levels will not exceed ~~45 dBA~~ FTA Cumulative Noise Levels Allowed by Criteria (Figure 4.11-1) at the closest sensitive receptor during nighttime operations (10 p.m. to 7 a.m.), ~~in compliance with the City of San Juan Capistrano, City of San Clemente, and County of Orange exterior noise standards~~. This will be achieved by the use of additional insulation equipment and

additional technological solutions to reduce corona noise levels during rainy weather conditions. To verify the efficiency of the corona noise reduction equipment, the applicant will measure operational noise levels at sensitive residential receptors located within 45 feet from the proposed 230-kV line segments during three rain events during the first two rainy seasons when the 230-kV line is operating. Monitoring reports shall indicate the existing ambient noise levels and weather conditions during measurements. The applicant shall conduct noise level measurements in compliance with the City of San Juan Capistrano and City of San Clemente requirements, as applicable. The applicant will submit results of the monitoring to the CPUC annually. If the monitoring reports determine that the corona noise levels exceed ~~45 dBA~~FTA Cumulative Noise Levels Allowed by Criteria at sensitive residential receptors located within 45 feet, the applicant will implement additional technological solutions and installation equipment and will repeat the measuring of operational noise levels at sensitive residential receptors located within 25 feet of the proposed 230-kV line segments during three rain events during the subsequent two rainy seasons, until the ~~45 dBA~~FTA Cumulative Noise Levels Allowed by Criteria threshold is no longer exceeded during rain events.

MM NV-5. Noise Control Plan. Prior to the start of construction, the applicant shall prepare a Noise Control Plan for the construction and restoration of the proposed project. The applicant shall submit the Noise Control Plan to the CPUC at least 30 days prior to the start of construction for review and approval. The Noise Control Plan shall include measures that the applicant shall employ during construction and restoration of the proposed project to keep generated noise levels below the Severe Impact range shown in Figure 4.11-1 (FTA 2006) of this EIR at the nearest sensitive receptors to each project construction location, in order to avoid significant impacts from temporary ambient noise increases. The Noise Control Plan shall include measures, such as the following:

- Install and maintain an absorptive noise control barrier in the perimeter of the San Juan Capistrano Substation construction site.
- Limit heavy equipment activity adjacent to residences or other sensitive receptors to the shortest possible period required to complete the work activity.
- Ensure that proper mufflers, intake silencers, and other noise reduction equipment are in place and in good working condition.
- Maintain construction equipment according to manufacturer recommendations.
- Minimize construction equipment idling.
- Noise from back-up alarms (alarms that signal vehicle travel in reverse) in construction vehicles and equipment shall be reduced by providing a layout of construction sites that minimizes the need for back-up alarms and using flagmen to minimize time needed to back up vehicles.
- When possible, use construction equipment specifically designed for low noise emissions (i.e., equipment that is powered by electric or natural gas engines instead of diesel or gasoline reciprocating engines). Electric engines have been reported to have lower noise levels than internal combustion engines.
- Where practical, locate stationary equipment such as compressors, generators, and welding machines away from sensitive receptors or behind barriers.

The Noise Control Plan shall detail the frequency, location and methodology for noise monitoring prior to and during various construction and restoration activities to ensure that generated noise levels do not exceed the Severe Impact range shown in Figure 4.11-1 of this EIR. The Noise Control Plan shall detail the actions and procedures that the applicant shall implement to mitigate impacts in the event that

monitoring detects that noise levels have exceeded the Severe Impact range shown in Figure 4.11-1 of this EIR. Noise level measurements shall be conducted in compliance with the City of San Juan Capistrano, City of San Clemente, and Orange County requirements.

The Noise Control Plan shall designate a Construction Relations Officer that is readily available to answer questions or respond to complaints during any hours or days that construction or restoration is occurring. The applicant shall send pre-construction notifications to sensitive receptors located within 100 feet from construction activities at least 30-days prior construction. The notification shall include a phone number for the public to contact the Construction Relations Officer. Additionally, each construction site shall include clearly visible signs with a phone number for the public to contact the Construction Relations Officer. The applicant shall submit on a monthly basis to the CPUC a summary report of the complaints submitted to the Construction Relations Officer. The summary report shall include detail on how each complaint was addressed, if and when the complaint was resolved, and contact information for the member of the public that submitted the complaint.

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4.12 Population and Housing

This section describes the environmental and regulatory settings and discusses impacts associated with construction and operation of the South Orange County Reliability Enhancement Project (proposed project) with respect to population and housing. No comments regarding population and housing were received during scoping. Growth-inducing impacts associated with the proposed project are discussed in Section 6.5 "Growth Inducing Impacts."

4.12.1 Setting

The proposed project would located in southern unincorporated Orange County, the City of San Juan Capistrano, the City of San Clemente, and northern unincorporated San Diego County on land under the jurisdiction of the United States Marine Corps as part of the Camp Pendleton base. The current and projected populations for these areas are listed in Table 4.12-1. The largest growth is anticipated to occur in unincorporated Orange County, followed by unincorporated San Diego County.

Table 4.12-1 Current and Projected Population in the Proposed Project Area

Location	2014	2020	2035	2014 to 2035 Change	
				Total	Percent
Unincorporated Orange County	120,533	159,100	189,300	68,767	57.1
City of San Clemente	64,874	68,100	68,300	3,426	5.28
City of San Juan Capistrano	35,900	38,100	37,800	1,900	5.29
Unincorporated San Diego County[a]	492,509	545,409	644,499	151,990	30.86

Sources: CDOF 2014a,b; SCAG 2012; SANDAG 2014a
Note:
[a] 2014 data were not available for unincorporated San Diego County, California. The value provided represents the region's 2013 population as published by the San Diego Association of Governments in 2014.

Current housing and projected housing unit estimates for each jurisdiction crossed by the proposed project are provided in Table 4.12-2. As with the population estimates, the largest change is projected to occur in unincorporated Orange County. Although the population is projected to increase in the City of San Clemente, the number of housing units is anticipated to decrease.

Table 4.12-2 Housing Units and Projections for the Proposed Project Area

Location	Housing Units			Change 2014 to 2035	
	2014[a]	2020	2035	Total	Percent
Unincorporated Orange County[b]	39,506 (3.8% vacant)	44,000	57,600	18,094	45.8
City of San Clemente[b]	26,025 (7.9% vacant)	24,800	25,200	-825	-3.2
City of San Juan Capistrano[b]	12,160 (4.6% vacant)	12,300	12,300	140	1.2
Unincorporated San Diego County[c], [d]	175,913 (7.9% vacant)	180,460	210,032	34,119	19.4

Sources: CDOF 2014b; SANDAG 2014a,b; SCAG 2012
Note:
[a] The value provided represent the 2014 City/County Population and Housing Estimates from California Department of Finance (Table 2: E-5).
[b] Southern California Association of Governments Population, Household, and Employment Integrated Growth Forecast
[c] San Diego Association of Governments Unincorporated San Diego County 2013 Demographic & Socio Economic Estimates (SANDAG 2014a)
[d] SANDAG Data Warehouse – Housing Forecast for Unincorporated San Diego County (Years 2020 and 2035) (SANDAG 2014b)

4.12.2 Regulatory Setting

4.12.2.1 Federal

There are no federal regulations applicable to the proposed project with respect to population and housing.

4.12.2.2 State

There are no California regulations applicable to the proposed project with respect to population and housing.

4.12.2.3 Regional and Local

County of Orange

The Orange County General Plan Growth Management Element and Housing Element establishes the County's programs and policies for enhancing housing supplies (County of Orange 2005a,b, 2013), but no specific policies or regulations are applicable to the proposed project with respect to population and housing.

City of San Clemente

The City of San Clemente General Plan Growth Management and Housing elements establishes the City's programs and policies for maintaining and enhancing the City's housing supply (City of San Clemente 2014a,b), and the following two policies are applicable to the proposed projects with respect to population and housing.

- ***Policy GM-2.01.*** *Timely Provision of Infrastructure and Services. We diligently monitor, influence, and respond as necessary to land planning and development activities outside of the City to ensure that land development provides timely and adequate transportation facilities (streets, highways, transit, etc.), wastewater collection and treatment, water supply, electrical, natural gas, telecommunications, solid waste disposal, storm drainage, other public infrastructure, public safety and public services (governmental administrative and capital, police, fire, recreational, cultural, etc.).*
- ***Policy GM-2.02.*** *Consistency with City Policies and Standards. We demand that the type, amount, and location of development provide infrastructure consistent with our General Plan goals and policies and City standards, including San Clemente's Hillside Development Ordinance and the Bicycle and Pedestrian Master Plan.*

City of San Juan Capistrano

The City of San Juan Capistrano General Plan Growth Management and Housing elements establishes the City's programs and policies for maintaining and enhancing the City's housing supply (City of San Juan Capistrano 1999, 2014), but no specific policies or regulations are applicable to the proposed projects with respect to population and housing.

4.12.3 Methodology and Significance Criteria

Current demographic data are provided from the Year 2010 United States Census. Estimates of population and housing are prepared annually through a joint effort of the Southern California Association of Governments and the San Diego Association of Governments for jurisdictions, subregional areas, and major

statistical areas. These data and the housing elements of the jurisdictions that would be traversed by components of the proposed project were reviewed. Potential impacts on population and housing were evaluated according to the following significance criteria. The criteria were defined based on the checklist items presented in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The proposed project would cause a significant impact on population and housing if it would:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);

Appendix G of the CEQA Guidelines also includes the following checklist items; the proposed project would cause significant impact on population and housing if it would:

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

The proposed project would not displace any persons or existing housing, and replacement housing would not be required. Therefore, the proposed project would have no impact under these criteria, and impacts on this resource are not discussed further.

4.12.4 Environmental Impacts and Mitigation Measures

Impact PH-1: Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
LESS THAN SIGNIFICANT

The proposed project would not include long-term staffing increases or the construction of new houses. As discussed in Section 2.4.1.2, "Construction Workforce and Equipment," up to 80 construction workers per day would be required to construct the proposed project. In the event that all 80 workers had to temporarily relocated to the proposed project area from outside of the area, the population of Orange County would increase up to 80 persons during peak construction, which would be a 0.03 percent increase compared to the Orange County population in 2013 (USCB 2014). A 0.03 percent temporary population increase would not result in substantial population growth in the proposed project area. Therefore, the proposed project would have a less than a significant impact on direct population growth.

The proposed project would indirectly induce growth within the South Orange County System. The proposed expansion of the Capistrano Substation, the upgraded transmission capability, and construction at the Talega Substation would increase the electrical capacity within the South Orange County System beyond the current projected demand (see Section 1.1.3, "Historical and Projected South Orange County System Demand"). This would result in sufficient electrical capacity to accommodate additional growth. Potential impacts from cumulative projects are discussed in Section 6.0, "Cumulative and Other CEQA Considerations." Any additional growth not identified in the cumulative project list (see Table 6-1) that would result from the increased electrical capacity would be speculative at this time. Therefore, any potential environmental impacts from indirect induced growth would be less than significant. Growth-inducing impacts associated with the proposed project are further discussed in Section 6.5, "Growth-Inducing Impacts."

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4.13 Public Services and Utilities

This section describes the environmental and regulatory settings and discusses impacts associated with construction and operation of the proposed project with respect to public services and utilities. During the scoping period, the following issue were raised and are addressed in this section: the proposed project's impact to city utilities, specifically water and sewer; and the proposed project's impact to the La Pata Avenue Greenwaste Facility. Impacts related to electrical demand management, recreation, and traffic are discussed in Section 3, "Description of Alternatives," Section 4.14, "Recreation," and Section 4.15, "Transportation and Traffic," respectively.

4.13.1 Environmental Setting

This section discusses public services and utilities provisions within the proposed project area. It provides an overview of the types and general locations of public service providers and utilities in the proposed project area.

4.13.1.1 Public Service Providers

Fire Services

The Orange County Fire Authority provides fire service to 23 cities in Orange County, including the cities of San Juan Capistrano and San Clemente, and all unincorporated areas in Orange County (OCFA 2014a). Orange County Fire Authority staffs and manages 71 fire stations located throughout the county (OCFA 2014b). Table 4.13-1 provides information about the fire stations within 2 miles of the proposed project.

Table 4.13-1 Fire Stations within 2 miles of the Proposed Project

Station	Address	Approximate Distance from a Component of the Proposed Project
Station #7	31865 Del Obispo San Juan Capistrano	1.0 mile south of San Juan Capistrano Substation
Station #49	31461 Golden Lantern Street Laguna Niguel	1.0 mile west of San Juan Capistrano Substation
Station #59	48 Avenida La Pata San Clemente	0.04 mile west of Transmission Line Segment 3

Source: OCFA 2014b

Police Services

The Orange County Sheriff's Department provides traffic and law enforcement to multiple cities in the county, including the cities of San Juan Capistrano and San Clemente, and all unincorporated areas of Orange County. The proposed project area would be served by the South Operations Division of the Orange County Sheriff's Department (OCSD 2014). The closest sheriff stations to the proposed project are located at 32506 Paseo Adelanto in San Juan Capistrano, approximately 1.5 miles south of the San Juan Capistrano Substation, and at 100 Avenida Presidio in San Clemente, approximately 2.75 miles southwest of the Talega Substation (City of San Clemente 2014a; City of San Juan Capistrano 2014a).

Schools

The Orange County Department of Education supports 28 kindergarten through 12th grade school districts throughout the county (OCDE 2014). During the 2013-2014 school year, Orange County enrolled 500,487 students.

Parks

The Cleveland National Forest is located in the southeast portion of Orange County, approximately 7 miles east of the proposed project. There are seven California State Parks located throughout Orange County (CSP 2014), as well as 22 county parks and several regional trails (OCP 2014). There are 27 city parks in San Juan Capistrano and 19 city parks in San Clemente (City of San Juan Capistrano 1999a; City of San Clemente 2014b).

Refer to Section 4.14, "Recreation," for further information about parks and other recreational activities in the proposed project area, and Section 4.15, "Transportation and Traffic," for information about bikeways and trails.

Other Public Facilities

Table 4.13-2 lists hospitals in the proposed project area, all of which provide basic emergency services (OSHPD 2014).

Table 4.13-2 Hospitals in the Proposed Project Area

Hospital	Address	Approximate Distance to a Component of the Proposed Project
Mission Hospital Regional Medical Center	27700 Medical Center Road Mission Viejo	3.30 miles north of the San Juan Capistrano Substation
Saddleback Memorial Medical Center - San Clemente	654 Camino De Los Mares San Clemente, CA 92673	4.5 miles west of the Talega Substation
Saddleback Memorial Medical Center – Laguna Hills	24451 Health Center Drive Laguna Hills, CA 92653	7.0 miles north of the San Juan Capistrano Substation

Source: OSHPD 2014

The Orange County Public Library Department maintains 33 libraries throughout the county, including branches in the cities of San Juan Capistrano and San Clemente (OCPL 2014).

4.13.1.2 Utilities

Potable and Non-Potable Water

Water services within the cities San Juan Capistrano and San Clemente are provided by their respective city's water districts. The unincorporated areas of Orange County that the proposed project would cross are under the jurisdiction of the Santa Margarita Water District. The San Juan Capistrano, San Clemente, and Santa Margarita water districts are members of the Municipal Water District of Orange County. The Municipal Water District of Orange County is a regional water wholesaler and resource planning agency that manages Orange County's imported water supply (MWDOC 2014). This imported water comes from Northern California via the State Water Project and the Colorado River (MWDOC 2011).

In 2010, the total water demand for the Municipal Water District of Orange County member agencies was approximately 485,311 acre-feet per year (afy) (MWDOC 2011).

Wastewater

The cities of San Juan Capistrano and San Clemente are members of the South Orange County Wastewater Authority, which operates 12 wastewater treatment plants (SOCWA 2014). The existing Capistrano and Talega substations are not currently served by a sewer system for stormwater or domestic wastewater disposal.

Storm Water

The cities of San Juan Capistrano and San Clemente and the unincorporated areas of Orange County that would be crossed by the proposed project are under the jurisdiction of the South Orange County Watershed Management Area (SOC WMA). The SOC WMA manages the stormwater management program throughout the proposed project area to prevent harmful pollutants from impacting water resources via stormwater runoff. In Orange County, stormwater and urban runoff enter the stormwater system from streets, curbs, and gutters. The untreated stormwater and runoff travel to local water bodies or the Pacific Ocean. (SOC WMA 2014).

Solid Waste

There are three active and permitted disposal landfills within Orange County (CalRecycle 2014a). These landfills are owned by Orange County Waste and Recycling and are rated by the San Diego Regional Water Quality Control Board (RWQCB) as Class III landfills. Additionally, the applicant may also transport waste to the Otay Landfill (Class III) in San Diego County. Class III landfills cannot accept hazardous or liquid wastes. Table 4.13-3 details the status of each landfill.

Table 4.13-3 Status of Active and Permitted Class III Disposal Facilities in ~~Orange County~~the Vicinity of the Proposed Project

Facility	Address	Remaining Capacity (in Cubic Yards)	Estimated Closure Date
Prima Deshecha Sanitary Landfill (SWIS 30-AB-0019)	32250 La Pata Avenue San Juan Capistrano, CA 92675	87,384,799[1]	12/31/2067
Olinda Alpha Sanitary Landfill (SWIS 30-AB-0035)	1942 N. Valencia Avenue Brea, CA 92823	38,578,383[1]	12/31/2021
Frank R. Bowerman Sanitary Landfill (SWIS 30-AB-0360)	11002 Bee Canyon Access Road Irvine, CA 92618	205,000,000[2]	12/31/2053
Otay Landfill (SWIS 37-AA-0010)	1700 Maxwell Road Chula Vista, CA 91911	24,514,904[3]	2/28/2028
	Total Remaining Capacity	**~~330,963,182~~ 355,478,086**	

Sources: Calrecycle 2014b-d, 2015
Notes:
[1] Assessed in 2005
[2] Assessed in 2008
[3] Assessed in 2012

Hazardous waste would be transported to either Kettleman Hills Facility (SWIS 16-AA-0023) in Kettleman City, California, or Clean Harbors Buttonwillow LLC (SWIS 15-AA-0257) in Buttonwillow, California. The Kettleman Hills facility has a remaining capacity of 6,000,000 cubic yards (CY), as of 2000. The Clean Harbors facility has an estimated closure date of January 1, 2040. (Calrecycle 2014e-f)

The La Pata Avenue Greenwaste Facility (SWIS 30-AB0364) is a composting facility (green waste) located at 31748 La Pata Avenue in San Juan Capistrano. This facility accepts agricultural, construction/demolition, and wood waste (Calrecycle 2014g).

4.13.2 Regulatory Setting

4.13.2.1 Federal

Clean Water Act

The Clean Water Act of 1972 (33 United States Code [U.S.C.] §1251 et seq.) requires states to set standards to protect water quality, including the regulation of storm water and wastewater discharge during construction and operation of a facility. This includes the creation of a system to establish discharge standards specific to water bodies (National Pollutant Discharge Elimination System [NPDES]), which regulates storm water discharge from construction sites through the implementation of a Storm Water Pollution Prevention Plan (SWPPP). Refer to Section 4.9, "Hydrology and Water Quality," for further information.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S.C. §6901 et seq.) establishes requirements for the management of solid waste. The RCRA establishes provisions for the design and operation of solid waste landfills. The act authorizes states to carry out many functions of the RCRA through their own waste programs and laws. The U.S. Environmental Protection Agency (EPA) has promulgated regulations to implement the provisions of the RCRA (40 Code of Federal Regulations [CFR] 239–282).

4.13.2.2 State

California Porter-Cologne Water Quality Act

This act provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designated the State Water Resources Control Board (SWRCB) as the ultimate authority over state water rights and water quality policy, and established nine RWCQBs to oversee water quality on a day-to-day basis at the local/regional level. The boards have the responsibility of granting NPDES permits for storm water runoff from construction sites. The San Diego RWCQB serves the proposed project area.

California Integrated Waste Management Act and Assembly Bill 341

The Integrated Waste Management Act of 1989 (Public Resource Code 40000 et seq.; Assembly Bill 939) requires all county and local governments to adopt a Source Reduction and Recycling Element to identify ways to reduce the amount of solid waste sent to landfills. This law set reduction targets of 25 percent by 1995 and 50 percent by the year 2000. Assembly Bill 341, signed into law in 2011, established a new statewide target of 75 percent disposal reduction by the year 2020.

Assembly Bill 341 requires the California Department of Resources Recycling and Recovery to develop and adopt regulations for mandatory commercial recycling, which was not required under the previous version of the Integrated Waste Management Act. The new Mandatory Commercial Recycling Regulation was approved at the CalRecycle monthly public meeting in January 2012. Per this regulation, as of July 1, 2012, businesses are required to recycle; however, the Integrated Waste Management Act, as amended by Assembly Bill 341, does not mandate a diversion percentage for businesses, and only requires that businesses implement a commercial recycling program.

California Health and Safety Code

Section 25150.7 of the California Health and Safety Code outlines procedures and regulations for the management and disposal of treated wood waste. Wood waste, including the type of wood utility poles that would be disposed as part of the proposed project, may be treated with preservatives and other chemicals to protect the wood. Because the chemical treatments could leach into water supplies when disposed of, Section 25150.7 was developed to restrict how and where treated wood waste can be disposed.

Emergency Regulations Related to California Drought Conditions

On January 17, 2014, Governor Brown issued an Executive Order declaring a State of Emergency due to current drought conditions in California. The Executive Order called on the Department of Water Resources to coordinate with local water districts on a campaign urging Californians to reduce water usage by 20 percent (CA Office of the Governor 2014a).

On April 24, 2014, Governor Brown issued another Executive Order urging that immediate action be taken "to mitigate the effects of the drought conditions upon the people and property within the State of California." The April 24th Executive Order also directed the SWRCB to "adopt and implement emergency regulations pursuant to Water Code section 1058.5, as it deems necessary to prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water, to promote water recycling or water conservation, and to require curtailment of diversions when water is not available under the diverter's priority of right" (CA Office of the Governor 2014b).

On July 6, 2014, the SWRCB responded to the Governor's April 24th Executive Order by adopting Emergency Regulations that require urban water suppliers to promote water conservation, prepare water shortage contingency plans, and submit monthly monitoring reports, among other measures (SWRCB 2014).

4.13.2.3 Regional and Local

San Diego Regional Water Quality Control Board

The San Diego RWQCB manages water quality for the jurisdictions traversed by components of the proposed project. The RWQCB is responsible for setting standards, issuing waste discharge requirements, determining compliance, and enforcing standards. The RWQCB monitors and sets standards for water quality under several programs, including storm water, wastewater treatment, and wetlands protection.

Because construction of the proposed project would disturb surface areas greater than 1 acre, the applicant would be required to obtain NPDES permits for the proposed project. To acquire this permit, the applicant would prepare a SWPPP that would include: information about the proposed project; monitoring and reporting procedures; and Best Management Practices, such as dewatering procedures, storm water runoff quality control measures, and concrete waste management, as necessary. The SWPPP would be based on final engineering design and would include all components of the proposed project.

Orange County

The Public Services and Facilities Element of the Orange County General Plan includes policies and programs that form an effective implementation plan to meet County goals (Orange County 2011). The following policies are applicable to the proposed project:

- ***General Policy 3:*** *To coordinate facility planning in a manner compatible with surrounding land uses and to review planned land uses adjacent to facilities for their compatibility with facility operations.*
- ***Solid Waste Policy 2:*** *To support and implement the adopted Solid Waste Management Plan to achieve waste management objectives.*
- ***Solid Waste Policy 3:*** *To promote the utilization of waste recycling and reuse measures that extend the operating life of existing solid waste facilities.*
- ***Wastewater Policy 1:*** *To protect quality in both delivery systems and groundwater basins through effective wastewater system management.*
- ***Wastewater Policy 3:*** *To ensure the adequacy of wastewater system capacity and phasing in consultation with the service providing agency(ies) in order to serve existing and future development as defined by the General Plan.*

City of San Juan Capistrano

The Parks and Recreation Element of the City of San Juan Capistrano General Plan include goals, policies, and plans to ensure the provision and maintenance of adequate parks and recreational facilities to meet the needs of the existing and future population of the City (City of San Juan Capistrano 1999a). The following policy is applicable to the proposed project:

- ***Policy 1.1:*** *Coordinate with local groups to identify and meet the community's recreational needs.*

The Public Services and Utilities Element of the City of San Juan Capistrano General Plan ensures that sufficient levels of public services are provided as San Juan Capistrano develops (City of San Juan Capistrano 1999b). The following policies are applicable to the proposed project:

- ***Policy 1.1:*** *Work closely with the Orange County Sheriff's Department in determining and meeting community needs for law enforcement services and facilities.*
- ***Policy 2.1:*** *Work closely with the Orange County Fire Authority in determining and meeting community needs for fire protection services and facilities.*
- ***Policy 5.1:*** *Work closely with the Orange County Public Library in determining and meeting community needs for library facilities and services, including hours and operation.*
- ***Policy 6.1:*** *Provide sufficient levels of water and sewer services to meet the needs of the community.*
- ***Policy 7.1:*** *Work closely with providers of energy, communications, and solid waste disposal in determining and meeting the needs of the community for energy, communications, and solid waste disposal.*
- ***Policy 7.4:*** *Reduce the per capita production of solid waste in San Juan Capistrano in concert with the City's Source Reduction and Recycling Element.*

City of San Clemente

The primary goal of the Public Services, Facilities, and Utilities Element of the City of San Clemente General Plan is to "provide a diverse range of effective public services, high quality public facilities, and efficient public utilities that meet local needs" (City of San Clemente 2014c). The following policies are applicable to the proposed project:

- ***PSFU-1.03. Access to Schools****. We work with local and regional partners to maintain safety in and around schools and improve access to schools and community services.*
- ***PSFU-2.01 Library Services****. We coordinate with the County of Orange to provide adequate library services and facilities that fulfill the needs of San Clemente residents and meet or exceed the County of Orange's minimum library standards.*
- ***PSFU-5.01. Water Resources****. We ensure that existing and new development does not degrade San Clemente's water resources.*
- ***PSFU-5.05. Water Supplies****. We provide and maintain adequate water supplies and distribution facilities capable of meeting existing and future daily and peak demands, including fire flow requirements.*
- ***PSFU-5.08. Recycled Water****. We encourage, and in some cases require, the use of recycled water when available through a Mandatory Use Ordinance. The City will continue to expand its recycled water program and seek new and improved technologies and best practices to use water more efficiently.*
- ***PSFU-5.10. Wastewater System****. We provide and maintain a system of wastewater collection and treatment facilities to adequately convey and treat wastewater generated in the City of San Clemente service area.*
- ***PSFU-5.12. Xeriscape Planting to Conserve Water****. To conserve water, we require new development to plant drought-tolerant landscaping, consisting of at least 60 percent (by landscaped area) California native plants, and encourage such plantings in existing development.*
- ***PSFU-7.03. Enforcement****. We maintain adequate legal authority to implement and enforce local plans and ordinances to comply with applicable regional, state, and federal requirements for stormwater runoff management and mitigation to protect our water quality.*
- ***PSFU-8.02. AB 939 Monitoring****. We monitor our solid waste generation and disposal/recycling facilities to ensure we meet or exceed AB 939 requirements for the diversion of solid waste, including construction and demolition waste.*
- ***PSFU-9.01. Coordination****. We coordinate with local electricity, natural gas, and other energy and utility providers to ensure adequate facilities are available to meet the demands of existing and future development and that such facilities are safely sited and operated.*
- ***PSFU-9.02. Facility Siting and Design****. We collaborate with various utility agencies to ensure local facilities are sited and designed to be safe and compatible with adjacent land uses. Through franchise agreements, lease agreements, and other means, the City requires public utilities to be disaster-resilient by providing emergency back-up provisions.*

4.13.3 Impact Analysis

4.13.3.1 Methodology and Significance Criteria

Potential impacts on public services and utilities were evaluated according to the following significance criteria. The criteria were defined based on Appendix G of California Environmental Quality Act (CEQA) Guidelines. The proposed project would cause a significant impact on public services and utilities if it would:

a) Result in substantial, adverse, physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following: (1) fire protection, (2) police protection, (3) schools, (4) parks, or (5) other public facilities;

b) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

c) Not have sufficient water supplies available to serve the project from existing entitlements and resources or require new or expanded entitlements;

d) Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs; or

e) Not comply with federal, state, or local statutes and regulations related to solid waste.

Appendix G of the CEQA Guidelines also includes the following checklist items:

- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Exceed wastewater treatment requirements of the applicable RWQCB;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments; and
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The proposed project would not require new water treatment facilities or the expansion of existing facilities because the majority of water would be used for dust suppression and would be absorbed into the ground. In addition, the proposed project would have no impact on regional or municipal sanitary wastewater treatment facilities or exceed wastewater treatment requirements established by the San Diego RWQCB because it would generate nominal volumes of wastewater associated with worker use of portable toilets during the construction period. Additionally, the applicant anticipates that most, if not all, workers for the proposed project would come from the applicant's existing service centers within the proposed project area, and any workers that do temporarily relocate (a peak of 80 persons) during construction would not permanently relocate. As a result, there would not be substantial overall impact on wastewater facilities throughout Orange County. Therefore, these checklist items are not applied as criteria in the analysis of environmental impacts related to public services and utilities.

4.13.3.2 Applicant Proposed Measures

The applicant has committed to the following as part of the design of the proposed project. See Section 2.6, "Applicant Procedures, Plans, Standards, and Proposed Measures," for a complete description of each project commitment.

APM-PS-1: Recreational Facility Access. Construction within existing public parks would not completely restrict access through the parks. Where necessary, SDG&E will create temporary foot and bicycle paths along with appropriate advance notice and signage to direct and allow for pedestrian and bicycle access through each affected park.

APM PS-2: Repair Damage to Public Facilities. All recreation facilities that are physically impacted during construction activities will be returned to an approximate pre-construction state, allowing for SDG&E operation and maintenance activities, following the completion of the Proposed Project, SDG&E will make replacements of any public damaged or removed equipment, facilities, and infrastructure, in a timely manner.

APM PS-3: Roadway Repair. SDG&E Contract Administrators oversee all aspects of construction and would ensure that contractors repair any damage caused by construction activities. Contract Administrators would also work with the customers and/or local agency to ensure repairs are sufficient and consistent with pre-construction conditions. Contractors working for SDG&E typically photograph and/or video document pre-construction conditions. At the completion of construction activities, this documentation is used to ensure that any damage that is caused by construction work is repaired.

4.13.3.3 Environmental Impacts

Impact PS-1: **Result in substantial, adverse, physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following:**

(1) Fire Protection
LESS THAN SIGNIFICANT

The proposed project would be constructed within areas designated as a Fire Threat Zone by the applicant based on California Department of Forestry and Fire Protection Wildland Fire Threat mapping assessment. Construction activities would increase the risk of fire caused by vehicle, helicopter, or construction equipment use or electrical discharge (see also Section 4.8, "Hazards and Hazardous Materials"). The applicant would implement its existing Wildland Fire Prevention and Fire Safety (ESP No. 113.1), and a project-specific fire plan to assist in safe practices to prevent fires within the proposed project area (see Section 2.6.1.3 "SDG&E Wildland Fire Prevention and Fire Safety Standard"). Therefore, the project would be prepared for any potential fire and would have a negligible impact to fire response providers in the area. No short-term provisions of additional fire facilities would be required for the project. Therefore, construction of the proposed project would result in a less than significant impact on fire services under this criterion.

Operation and maintenance activities would be similar to those associated with the existing facilities and, therefore, would not impact local or regional fire protection services. As part of the proposed project, the

replacement of wood poles with steel poles is often undertaken specifically to minimize the risk of wildfires that exists when certain atmospheric conditions occur within geographic areas designated as fire threat areas. The new steel structures would be able to withstand more severe fire conditions than the existing wood poles and, therefore, would result in a beneficial impact for fire service providers.

(2) Police Protection

LESS THAN SIGNIFICANT

Construction of the proposed project may require the assistance of the Orange County Sherriff's Department in the event of theft or vandalism of the applicant's property (e.g., equipment, materials) Security fencing, locking gates, and security personnel would be used to secure stored equipment at the substations, staging yards, and right-of-ways (ROWs); therefore, the likelihood of such occurrences would be relatively low, and there would be no significant impact to police services during construction.

Operation and maintenance activities would be similar to those associated with the existing facilities and substations and, therefore, would not create a new impact on police services.

(3) Schools

LESS THAN SIGNIFICANT

As discussed in Section 2.4.1.2, "Construction Workforce and Equipment," up to 80 construction workers per day would be required to construct the proposed project. In the event that all 80 workers have to temporarily relocated to the proposed project area from outside of the area, the population of Orange County would increase up to 80 persons during peak construction, which would be a 0.03 increase compared to the Orange County population in 2013 (USCB 2014). Therefore, the increased population would have a less than significant impact to the school districts' enrollment rates throughout Orange County. No new or physically altered schools would be necessary as a result of the proposed project, and impacts to schools would be less than significant.

Construction of the proposed project would occur adjacent to San Juan Hills High School. Impacts to the school related to air quality, noise, and traffic are discussed in Section 4.3, "Air Quality;" Section 4.11, "Noise and Vibration;" and Section 4.15, "Transportation and Traffic," respectively.

(4) Parks

LESS THAN SIGNIFICANT

As discussed in Section 2.4.1.2, "Construction Workforce and Equipment," up to 80 construction workers per day would be required to construct the proposed project. In the event that all 80 workers have to temporarily relocated to the proposed project area from outside of the area, the population of Orange County would increase up to 80 persons during peak construction, which would be a 0.03 increase compared to the Orange County population in 2013 (USCB 2014). The temporary population increase would be insignificant with respect to the total population of Orange County, San Juan Capistrano, or San Clemente, and would not directly create a significant increase in the demand for the local parks.

Construction of the proposed project would temporarily restrict access to portions of Arroyo Park, Russell Cook Park, and El Camino Real Park~~, and the Junipero Serra Park~~. Additionally, construction of the proposed project would require a 6-week closure of Junipero Serra Park. The applicant would implement APM-PS-1 through APM-PS-3 to ensure that pedestrian and bicycle access would not be completely restricted during construction and that park facilities and roadways are returned to pre-

construction conditions at the end of construction. APM-PS-1 would not be applicable to Junipero Serra Park as the location of the park, which abuts I-15 perpendicularly, would not provide through pedestrian or bicyclist access. ~~Construction of the proposed project would not result in the need to restrict access to the entire park; however, t~~The change in access to the existing parks may indirectly cause increased demand for other local non-restricted parks. Due to the quantity of city, county, and state parks in the area and the relatively temporary nature of construction associated with the proposed project, direct impacts to access to parks would be less than significant. A discussion regarding the impact from use of recreational facilities is further discussed in Section 4.14, "Recreation."

(5) Other Public Facilities
LESS THAN SIGNIFICANT

As discussed in Section 2.4.1.2, "Construction Workforce and Equipment," up to 80 construction workers per day would be required to construct the proposed project. In the event that all 80 workers have to temporarily relocated to the proposed project area from outside of the area, the population of Orange County would increase up to 80 persons during peak construction, which would be a 0.03 increase compared to the Orange County population in 2013 (USCB 2014). The temporary population increase would be insignificant with respect to the total population of Orange County; therefore, local libraries, hospitals, or other public service facilities would have sufficient capacity to accommodate the change in population and the proposed project would not necessitate the construction of new, or alteration of existing, public facilities for these uses. Impacts on public facilities would be less than significant.

Impact PS-2: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
LESS THAN SIGNIFICANT

Storm water drainage at the San Juan Capistrano Substation currently flows to a discharge structure located at the southwest corner of the site where it is discharged via an 18-inch pipe into the existing 57-inch city storm drain running along Camino Capistrano. A portion of the northwestern quadrant of the site drains by sheet flow to the curb inlets along the east side of Camino Capistrano.

Construction at the San Juan Capistrano Substation includes installation of a new storm water drainage system. Storm water would be collected by a series of inlets, culverts, and bioswales, and would be conveyed to the bioretention facilities at the southwest corner of the San Juan Capistrano Substation. The bioretention facilities would have a controlled discharge to the existing 57-inch storm sewer running underneath Camino Capistrano. As a result of the new storm water drainage system, there would be no additional sheet flow runoff from the site to the curb and gutters on Camino Capistrano. No other drainage facilities would be constructed or expanded as part of the project.

Project construction would generate storm water runoff and runoff from dust control activities. The proposed project would not result in a substantial increase in the amount of impervious surfaces, and runoff volumes are anticipated to be roughly the same as current conditions. No new public stormwater drainage facilities or expansion of existing public facilities would be required. Therefore, impacts under this criterion would be less than significant.

Impacts associated with stormwater are also discussed in Section 4.9, "Hydrology and Water Quality."

Impact PS-3: Insufficient water supplies available to serve the project from existing entitlements and resources or new or expanded entitlements required.
LESS THAN SIGNIFICANT WITH MITIGATION

Construction of the proposed project would require approximately 82 acre-feet (af) (26,618,996 gallons) of water for dust control used during grading and site development activities and during foundation work (concrete). Water would be obtained from municipal water sources.

The Municipal Water District of Orange County had a water demand of 485,311 afy in 2010. The proposed project would only require 0.01 percent of that demand during construction. Although the Municipal Water District of Orange County appears to have sufficient water supplies available for the applicant's construction needs, due to the rapidly evolving drought conditions in the state of California, it is unknown whether the Municipal Water District of Orange County will have sufficient water supplies available at the time of construction. Therefore, MM PS-1 is required (see Section 4.13.4, "Mitigation Measures"). With the implementation of MM PS-1, which requires the preparation of a Water Efficiency Plan and the use of reclaimed water, to the extent feasible, impacts would be reduced to less than significant.

Operation and maintenance activities would be similar to those associated with the existing facilities and, therefore, would have no impact on water supply from existing entitlements.

Impact PS-4: Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs.
LESS THAN SIGNIFICANT

The proposed project would generate approximately 75,500 CY of solid waste during construction. For disposal of typical construction debris, ~~three~~the four Class III sanitary landfills in ~~Orange County~~the vicinity of the proposed project could serve the proposed project, including Prima Deshecha, Olinda Alpha, Otay, and Frank R. Bowerman. As shown in Table 4.13-3, the total remaining capacity of the three Class III landfills is approximately ~~330~~355 million CY. The applicant would recycle and salvage construction waste materials, where feasible, to assist the local jurisdictions in meeting their solid waste diversion goals and Assembly Bill 939 and Assembly Bill 341 standards. Additionally, as discussed above, two Class I landfills with sufficient capacity to accept the proposed project's quantities of hazardous waste materials would be available. Therefore, impacts under this criterion would be less than significant.

Transmission Line Segment 3 crosses the entrance to the Prima Deshecha Sanitary Landfill. Other than the disposal of solid wastes at the Prima Deshecha Sanitary Landfill as discussed above, construction activities of the proposed project would have no impact to the capacity of the facility. The proposed project would not use the La Pata Avenue Greenwaste Facility located at the intersection of La Pata and Vista Montana in San Juan Capistrano. Construction of Transmission Line Segments 2 and 3 would occur near the La Pata Avenue Greenwaste Facility, but would not be located within the facility. Therefore, the project would have no impact to the capacity of the facility.

Operation and maintenance activities would be similar to those associated with the existing facilities and, therefore, would have no impact on solid waste facilities.

Impact PS-5: Noncompliance with federal, state, or local statutes and regulations related to solid waste.
NO IMPACT

Construction and operation of the proposed project would require limited use of hazardous materials (e.g., fuels, lubricants, and cleaning solvents). The applicant would dispose of hazardous waste at either the Kettleman Hills Facility or Clean Harbors Buttonwillow LLC.

Utility wood waste (poles and cross arms) removed during construction of the project would be refurbished or disposed of at the Prima Deshecha Sanitary Landfill, which is a solid waste facility approved by the San Diego RWQCB for the disposal of treated wood waste. Other hazardous wastes (e.g., transformer oil) generated by construction and operation of the proposed project and its disposal are further discussed in Section 4.8, "Hazards and Hazardous Materials."

Construction of the proposed project would also result in the generation of various non-hazardous solid wastes. The applicant would recycle and salvage construction waste materials, where feasible, to assist the local jurisdictions in meeting their solid waste diversion goals and Assembly Bill 939 and Assembly Bill 341 standards. There are ~~three~~four Class III sanitary landfills in ~~Orange County~~the vicinity of the proposed project that have the capacity to receive the remaining non-hazardous solid waste. The proposed project would have no impact on federal, state, or local statutes and regulations related to solid waste.

4.13.4 Mitigation Measures

MM PS-1: Water Efficiency Plan. The applicant will make reasonable attempts to reduce overall water use and will reduce potable water use by at least 20 percent during drought conditions, as declared by the State of California. The applicant will be required to research reclaimed water sources and acquire reclaimed water to the greatest extent practicable. The applicant will prepare and submit a Water Efficiency Plan to the California Public Utilities Commission (CPUC) for review and approval at least 60 days prior to construction. The Water Efficiency Plan will detail the applicant's water efficiency measures, including the use of reclaimed water, palliatives, alternative construction methods, or other measures proposed by the applicant. The Water Efficiency Plan will detail the applicant's attempts to secure reclaimed water. In the event that a sufficient supply of reclaimed water cannot be reasonably obtained, the applicant will provide a well-documented justification for any use of potable water to be used for construction activities. If, at any time during construction, the State Water Resources Control Board (SWRCB) rescinds their Emergency Regulations (Resolution No. 2014-0038) due to a cessation of drought conditions in the state, the applicant may request that the CPUC rescind this mitigation measure. Alternatively, the applicant will need to revise their Water Efficiency Plan to remain in compliance with future adopted SWRCB regulations regarding water use during drought conditions.

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4.14 Recreation

This section describes the environmental and regulatory settings and discusses impacts associated with construction and operation of the South Orange County Reliability Enhancement Project (proposed project) with respect to recreation. The following issues related to recreation were raised during scoping for the proposed project and are addressed in this section: impacts on Bella Collina Towne & Golf Club users, potential impact on the Cristianitos Trail, the San Juan Creek Regional Riding and Hiking Trail, the existing Prima Deshecha Trail, and the proposed Prima Deshecha Trail. Impacts on bikeways and other alternative transportation are addressed in Section 4.15, "Transportation and Traffic." Electro-magnetic fields are discussed in Section 4.8, "Hazards and Hazardous Materials." Section 4.1, "Aesthetics," addresses impacts associated visual quality along Camino Capistrano.

4.14.1 Setting

The proposed project would be located in the cities of San Clemente and San Juan Capistrano, and in unincorporated areas of southwestern Orange County. Talega Substation, which would connect to the proposed San Juan Capistrano Substation, is located in an unincorporated area of northwestern San Diego County, on land owned and under the jurisdiction of the United States Marine Corps within its Camp Pendleton base.

Recreational areas within the proposed project area are illustrated in Figure 4.10-1 in Section 4.10, "Land Use and Planning." As detailed in Table 4.14-1, numerous recreational areas, including public parks and recreation areas, golf courses, private recreation areas, and equestrian, bicycle, and hiking trails are located in the vicinity of the proposed project. Table 4.14-1 lists riding and hiking trails either within the project boundary or within a 1-mile radius of the proposed project. Additional information is provided in the Regional Riding and Hiking Trails Maps in the Recreation Element of the Orange County General Plan (County of Orange 2005); the Parks and Recreation Element of the City of San Juan Capistrano General Plan and the City's recreational trail map (City of San Juan Capistrano 1999, 2007); and the Recreation Element of the City of San Clemente General Plan, as well as the City's Trail & Bikeways Map (City of San Clemente 2014a,b). There are no regional parks or trails within the unincorporated areas of the counties of Orange or San Diego within 1 mile of the proposed project.

Table 4.14-1 Recreational Facilities in the Vicinity of the Proposed Project

Recreational Facility Name	Recreational Facility Details	Closest Proposed Project Component
City of San Juan Capistrano		
Community center/recreation area	A private recreation area that includes a toddler playground and volleyball court. The community is bounded by Avenida De La Vista, Calle San Diego, and Calle San Antonio	0 feet from Transmission Line Segment 1a
El Camino Real Park	A 4.5-acre public park featuring bike paths, grassy areas, picnic tables, and restrooms.	500 feet west of Pole 2a;Transmission Line Segment 1a ; Distribution Line Segment A
Camino Capistrano Greenway	A public park corridor with walking trails and grassy areas	0 feet from Transmission Line Segment 1a; 0 feet from Distribution Line Segment A
Junipero Serra Park	A 3.75-acre public park that features bike paths, a children's play area, and a grassy area.	0 feet from Transmission Line Segment 1b; 0 feet from Distribution Line Segment B

Table 4.14-1 Recreational Facilities in the Vicinity of the Proposed Project

Recreational Facility Name	Recreational Facility Details	Closest Proposed Project Component
Arroyo Park	A 3.6-acre public park that includes equestrian trails and a grassy area	0 feet from Transmission Line Segment 1b
Russell Cook Park	This public park spans three areas: Cordova (9.0 acres), Del Campo (1.5 acres), and La Novia (6.5 acres). The park is a major community park that features barbecue and fire rings, bike paths, equestrian/hiking trails, multi-purpose fields, grassy areas, softball and soccer fields, volleyball courts, and restroom facilities.	0 feet from Transmission Line Segment 1b
Lot "F" in the Whispering Hills Planned Community	The Whispering Hills Estates includes a 169-acre conservation easement and a private neighborhood park within the east canyon residential area. The private park includes a grassy area and recreational courts.	0 feet from Transmission Line Segments 1b and 2 and 550 feet west of Segment 3
Marbella Golf Course and Country Club	A private club that provides golf, tennis, swimming, and a club house for social events.	0 feet from Transmission Line Segment 1b
San Juan Hills Golf Club	The San Juan Hills Golf Club is a private golf course with a sports bar and grill.	0.6 miles west of Transmission Line Segment 1b
Caballo Trail, Belford-Marbella Trail, the San Juan Creek Trail, Las Vaqueres Trail, Juliana Farms Trail, the Whispering Hills East and West Trails.	Multiple riding (horse and bicycle) and hiking trails traverse through the proposed project area. More trails are currently proposed, including the San Juan Creek Trail, which would travel northwest through the city along the north side of San Juan Creek and provide connections the Caballo, Belford-Marbella, and La Novia trails within the vicinity of the proposed project. South of San Juan Creek, the Las Vaqueras Trail and Golondrina Trail connect to the Juliana Farms, La Mancha, Forster Ridgeline, and Whispering Hills trails, which continue south through the Prima Deshecha trail network and toward the City of San Clemente.	Transmission Line Segment 1b and Segment 3 pass over some segment of each trail.
City of San Clemente		
Prima Deshecha Trail and Regional Park[1]	The Prima Deshecha Trail is broken into two sections, a 1.8-mile north section and a 3.1-mile south section. The dirt trail winds behind an industrial park at the intersection of Pico and Vista Hermosa. Orange County indicates that the Prima Deshecha Landfill's end use will be a regional park (County of Orange 2014). The planned park would be located in a currently active refuse disposal area that is expected to be filled in 2019. The park may also include perimeter multiuse trails that would connect to existing trails west and east of the park (County of Orange 2010).	0 feet from Transmission Line Segment 3

Table 4.14-1 Recreational Facilities in the Vicinity of the Proposed Project

Recreational Facility Name	Recreational Facility Details	Closest Proposed Project Component
La Pata Vista Hermosa Sports Park	This sports park is located at a 45-acre site owned by the City of San Clemente at the southwest corner of the intersection of Avenida La Pata and Avenue Vista Hermosa.	250 feet from the proposed project disturbance area
Talega Golf Club, Pacific Golf and Country Club	The Talega Golf Club is an 18-hole public golf course.	0.20 miles west from Transmission Line Segment 3
Bella Collina Towne & Golf Club	The Bella Collina Towne & Golf Club is a private club that provides golf, tennis, swimming, and a club house for social events.	Within 250 feet from Transmission Line Segment 3
Forster Ridgeline Trail[1]	The Forster Ridgeline trail trends from the southwest to the northeast from Avenida Vista Hermosa to the San Clemente–San Juan Capistrano City boundary.	0 feet from Transmission Line Segments 1b, 2, and 3
Pico and Cristianitos Trails	The Pico and Cristianitos trails connect the Prima Deshecha south trail to conservation areas north (Rancho Mission Viejo) and south (San Onofre State Beach).	0 feet from Transmission Line Segments 3 and 4
Unincorporated San Diego County		
San Onofre Beach Preserve	The San Onofre Beach Preserve runs south from Talega Park to the Pacific Ocean. The preserve includes multiple trails, unpaved roads, a campground.	0 feet from Transmission Line Segments 4

Sources: County of Orange 2005; City of San Juan Capistrano 1999, 2007; City of San Clemente 2014a,b; OCPW 2014
Notes:
1. Recreational facility may be closed in the proposed project area through fall 2016 due to construction of the La Pata Extension Project (OCPW 2014)

4.14.2 Regulatory Setting

4.14.2.1 Federal and State

There are no federal or state regulations that apply to the impact analysis on recreation in the proposed project area.

4.14.2.2 Regional and Local

County of Orange

No goals or policies listed in the Recreation Element of the Orange County General Plan regarding recreation would apply to the proposed projects (County of Orange 2005).

City of San Clemente

The City of San Clemente General Plan establishes a number of goals designed to maintain and improve recreational opportunities with the intent of making the City a year-round recreation destination. The following policies apply to the proposed project with respect to recreation:~~None of the policies established to reach the goals, however, apply to the analyses presented in this section~~

BPR-4.01. Open Space Preservation. We encourage and support the preservation of open space within and adjacent to the City.

BPR-4.02. Trails and Staging Areas. We support the development, maintenance and enhancement of local trails and staging areas using best sustainable practices (City of San Clemente 2014~~1~~).

Additional ~~P~~policies regarding the preservation of natural features and open space are addressed in Section 4.1, "Aesthetics," and Section 4.10, "Land Use." Policies regarding pedestrian and bicycle trails are addressed in Section 4.15, "Transportation and Traffic."

City of San Juan Capistrano

The City of San Juan Capistrano General Plan establishes a number of goals designed to maintain and improve recreational opportunities within the city. The following policy applies to the proposed project with respect to recreation:

- **Policy 1.9.** Utilize existing public utility easements for recreation and open space.

4.14.3 Impact Analysis

4.14.3.1 Methodology and Significance Criteria

To assess impacts on recreation, the proposed construction schedule and number of construction workers (Chapter 2, "Project Description") was reviewed to determine whether the proposed project would involve the relocation of workers to the proposed project area. An increase in population in the proposed project area could lead to increased use of recreation facilities. Potential impacts on recreation were evaluated according to the following significance criterion, which is based on the checklist items presented in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The proposed project would cause a significant impact on recreation if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Appendix G of the CEQA Guidelines also includes the following checklist item:

- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

The proposed project would not include or require the construction or expansion of recreational facilities. Therefore, this item is not applied as a criterion in the analysis of environmental impacts presented in the following sections.

4.14.3.2 Applicant Proposed Measure

There are no Applicant Proposed Measures (APMs) associated with Recreation. See Section 2.6, "Applicant Procedures, Plans, Standards, and Proposed Measures," for a complete description of each project commitment.

4.14.3.3 Environmental Impacts

Impact RE-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
LESS THAN SIGNIFICANT

Construction of the proposed project would occur within portions of Camino Capistrano Greenway, Junipero Serra Park, Arroyo Park, Russell Cook Park, Lot "F", Marbella Golf Course and Country Club, Prima Deshecha Regional Park, San Onofre Beach Preserve and several city and regional trails (see Table 4.14-1). Construction activities have the potential to significantly accelerate the deterioration of these recreational facilities through ground disturbance and damage to equipment or buildings. The applicant would implement APM-PS-2 to ensure that recreational facilities are returned to pre-construction conditions at the end of construction. Implementation of APM-PS-2 would reduce potential direct impacts on recreational facilities to a less than significant level.

As discussed in Section 2.4.1.2, "Construction Workforce and Equipment," up to 80 construction workers per day would be required to construct the proposed project. In the event that all 80 workers needed to temporarily relocate to the proposed project area from outside of the area, the population of Orange County would increase by 80 persons during peak construction, which would be a 0.03 percent increase compared to Orange County's population in 2013 (USCB 2014). This temporary population increase would be insignificant with respect to the total population of Orange County and would not directly create a significant increase in the demand for the local parks.

The number and variety of recreational facilities within the proposed project area, some of which are shown in Figure 4.10-1, would be adequate to accommodate the potential increase in use of local recreational areas and facilities by construction workers, particularly because workers could relocate to anywhere within the greater project vicinity.

Operation and maintenance activities at each substation and segment of the proposed project would not require staff beyond the existing San Diego Gas & Electric Company staff that already conducts periodic inspections and maintenance of these facilities. There would be no long-term increase in the use of existing neighborhood and regional parks or other recreational facilities. A less than significant impact would result from the proposed project under this criterion.

4.14.4 Mitigation Measures

No mitigation measures are required.

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4.15 Transportation and Traffic

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the South Orange County Reliability Enhancement Project (proposed project) with respect to transportation and traffic. During scoping, comments addressing the following issues were received and are addressed in this section: impacts on traffic during construction, impacts from staging areas that would be used during construction, impacts from road closures on La Pata Avenue and Vista Montana, and impacts from trenching on the roadbed within the recently paved areas of State Route (SR)-74.

4.15.1 Environmental Setting

Private vehicles are the primary mode of transportation throughout the proposed project area. The transportation system in the areas of unincorporated Orange County and the cities of San Clemente, San Juan Capistrano, and United States Marine Corps land in San Diego County where the proposed project would be situated, also includes bus transit, commuter and regional rail, bicycle facilities, pedestrian facilities, and multi-use trails. The following sections describe these facilities in greater detail.

Information regarding roadway system and transportation infrastructure was obtained from highway maps, route alignment maps, the Proponent's Environmental Assessment, and other maps from various reports and websites of the affected State, regional, and local agencies. Roadway capacities and operating criteria were obtained from general plans, regional transportation authorities, engineering departments, and public works departments of the affected agencies. Lane information was obtained from aerial photographs, local government agencies, and public maps.

4.15.1.1 Regional Highway Network

The primary highways in the proposed project area include SR-74 and Interstate 5 (I-5). Highways are discussed further below and shown in Appendix I.

Interstate-5

I-5 runs north to south from the Canadian border to the city of San Diego. Within the proposed project area, I-5 is an eight- to ten-lane highway and is the primary regional north-south transportation route. I-5 runs through parts of the city of San Juan Capistrano and the city of San Clemente.

State Route 74

SR-74, also known as Ortega Highway in the proposed project area, is a state highway that runs west from Riverside County near the city of Palm Desert, to San Juan Capistrano in Orange County. SR-74 is a two- to six-lane highway in the proposed project area.

4.15.1.2 Local Roadway Network

The local roads that would be utilized as construction access routes or crossed by the proposed project are listed in Table 4.15-1. Local roadways that would be affected by the proposed project are classified as either arterial or collector roadways. An arterial roadway is a roadway that is interrupted by traffic control devices such as signals or stop signs and primarily serves through traffic. A collector roadway is

a roadway that provides land access and traffic circulation within residential, commercial, and industrial areas (Transportation Research Board 2010).

Table 4.15-1 Local Roadways Affected by the Proposed Project

Roadway	Roadway Classification	Project Component	Relation to Proposed Project
City of San Juan Capistrano			
Oso Road	Collector	Transmission Line Segment 1a	Construction access route.
Avenida De La Vista	Collector		New circuit structures would be placed along the east side of the road between Calle San Antonio and Calle San Diego.
Calle San Diego	Collector		Crossing (underground).
Camino Capistrano	Arterial	San Juan Capistrano Substation; Transmission Line Segment 1a; 12-kV Segments A, B	Construction access route. Transmission Line Segment 1a crossing (underground). 12-kV Segment A runs along roadway (underground) adjacent to San Juan Capistrano Substation.
Junipero Serra Road	Arterial	San Juan Capistrano Substation; 12-kV Segments A through L	Construction access route.
Calle Bonita	Collector	San Juan Capistrano Substation; Transmission Line Segment 1b; 12-kV Segment B	San Juan Capistrano Substation is located on the north side of the road. Construction access route for Transmission Line Segment 1b. 12-kV Segment B runs along roadway (underground) adjacent to San Juan Capistrano Substation.
Calle Santa Rosalia	Collector		San Juan Capistrano Substation is located on the west side of the road north of Calle Bonita. Transmission Line Segment 1b crossing (overhead and underground). 12-kV Segment B runs along roadway (underground) adjacent to San Juan Capistrano Substation.
Rancho Viejo Road	Arterial	Transmission Line Segment 1b; 12-kV Segments D through L	Transmission Line Segment 1b crossing (overhead) and construction access route. 12-kV Segments D and E run along roadway (underground).
Golf Club Drive	Arterial		Transmission Line Segment 1b crossing (overhead).
Via Priorato	Collector		Construction access route.
Carril de Maderas	Collector		Construction access route.
Calle de la Rosa	Collector		Transmission Line Segment 1b crossing (overhead) and construction access route.
Sundance Drive	Collector		Transmission Line Segment 1b crossing (overhead) and construction access route.
Calle Arroyo	Collector	Transmission Line Segment 1b	Transmission Line Segment 1b crossing (overhead) and construction access route.
La Novia Avenue	Collector	Transmission Line Segment 1b; 12-kV Segment F	Construction access route.
San Juan Creek Road	Arterial	Transmission Line Segment 1b	Transmission Line Segment 1b crossing (overhead) and construction access route.
Juliana Farms Road	Collector	Transmission Line Segment 1b	Construction access route, link to Staging Area 1.
Via Pomplana	Collector	Transmission Line Segment 1b, 2	Transmission Line Segment 2 (underground) along roadway and construction access route.

Table 4.15-1 Local Roadways Affected by the Proposed Project

Roadway	Roadway Classification	Project Component	Relation to Proposed Project
City of San Juan Capistrano and Unincorporated Orange County			
Vista Montana	Collector	Transmission Line Segments 1b, 2, 3; 12-kV Segments I, J	Transmission Line Segment 2 (underground) along roadway and construction access route. Removal of 12-kV Segment J that runs along roadway. (underground). 12-kV Segment I runs along roadway (underground).
La Pata Avenue	Collector	Transmission Line Segments 1b, 2, 3; 12-kV Segments G through L	Construction access route. Runs parallel to Transmission Line Segment 3. Link to Staging Area 2. 12-kV Segments G, H, I, K, and L run along roadway (underground and overhead).
City of San Clemente			
Calle Saluda	Collector	Transmission Line Segment 3	Transmission Line Segment 3 crossing (overhead) and construction access route.
Avenida La Pata	Arterial		Construction access route. Runs parallel to Transmission Line Segment 3.
Avenida Vista Hermosa	Arterial		Transmission Line Segment 3 crossing (overhead). Construction access route and link to Staging Area 3.
Avenida Pico	Arterial	Transmission Line Segments 3, 4; Talega Substation; 12-kV Segment M	Construction access route for Transmission Line Segments 3 and 4,Talega Substation, and 12-kV Segment M. Transmission Line Segment 3 crossing (overhead). Link to Staging Area 5.
Calle Del Cerro	Collector	Transmission Line Segments 3, 4; Talega Substation	Construction access route and link to Staging Area 4.
Avenida Vista Montana	Collector	Transmission Line Segments 3, 4; Talega Substation	Construction access route and link to Staging Area 4.

Source: SDG&E 2012
Key:
kV = kilovolt

4.15.1.3 Existing Traffic Conditions

Level of service (LOS) is the measure of traffic performance established by the Transportation Research Board's Highway Capacity Manual. It is used to measure the average operating conditions on roadways and at intersections during a one-hour period. The metric is based on volume-to-capacity (V/C) ratio, which compares roadway capacity to level of traffic during peak hours. Once determined, a V/C ratio is assigned a corresponding LOS value to describe roadway or intersection operations. Roadways and intersections that are at or near capacity experience greater congestion and corresponding vehicle delay. The highest ranked roadways are designated "LOS A," representing free-flowing traffic, and the lowest ranked roadways are designated "LOS F," representing extreme congestion. "LOS D" is generally identified as the maximum level of delay that motorists will find acceptable in suburban areas, and "LOS C" is the maximum level of delay determined to be acceptable in rural areas (AASHTO 2004).

Orange County Transportation Authority (OCTA) *Guidance for the Administration of the Orange County Master Plan of Arterial Highways* utilizes the definitions of the six LOSs provided in the 2010 Highway Capacity Manual. OCTA's LOS definitions are also consistent overall with those included in the Orange County General Plan planning criteria for determining arterial highway classifications. Table 4.15-2

provides general descriptions of LOS based on Orange County's definitions for uninterrupted flow facilities such as arterial roadways.

Table 4.15-2 OCTA Level of Service Definitions for Uninterrupted Flow Facilities

Level of Service	Definition
A	Describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted, and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Describes stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Is characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a volume-to-capacity ratio greater than 1.0.

Source: OCTA 2012

Existing Level of Service in the Proposed Project Area

Table 4.15-3 shows the Year 2015 baseline average daily traffic (ADT) volumes and LOS (LLG 2015a,b) for local roadways affected by the proposed project area.

Table 4.15-3 Existing Average Daily Traffic and Level of Service – Year 2015

Roadway	Classification	Existing Capacity (LOS E)[1]	Existing ADT	V/C	Existing LOS
Junipero Serra Road	4 Lanes Undivided	25,000	14,700	0.588	A
Camino Capistrano (North of SR-74)	3 Lanes Undivided	18,750	15,200	0.811	D
Camino Capistrano (South of SR-74)	4 Lanes Undivided	25,000	18,900	0.756	C
Rancho Viejo Road	4 Lanes Undivided	25,000	14,100	0.564	A
Calle Arroyo	4 Lanes Undivided	25,000	7,800	0.312	A
San Juan Creek Road	2 Lanes Undivided	12,500	11,500	0.920	E
La Novia Avenue	2 Lanes Undivided	12,500	14,000	1.120	F
Via Pomplana	2 Lanes Undivided	12,500[3]	700	0.056	A
Vista Montana	4 Lanes Divided	37,500[3]	6,700	0.179	A
Calle San Diego	2 Lanes Undivided	12,500[3]	800	0.064	A
La Pata Avenue	2 Lanes Undivided	12,500	5,300	0.424	A
Avenida la Pata (North of Avenida Pico)	6 Lanes Divided	56,300	6,600	0.117	A

Table 4.15-3 Existing Average Daily Traffic and Level of Service – Year 2015

Roadway	Classification	Existing Capacity (LOS E)[1]	Existing ADT	V/C	Existing LOS
Avenida la Pata (South of Avenida Pico)	4 Lanes Divided	37,500	9,900	0.264	A
Avenida Vista Hermosa	4 Lanes Divided	37,500	31,900	0.851	D
Calle Del Cerro	2 Lanes Divided	12,500	15,400	1.232	F
Avenida Vista Montana	2 Lanes Undivided	12,200	6,600	0.528	A
Avenida Pico (West of Avenida La Pata)	6 Lanes Divided	56,300	51,700	0.918	E
Avenida Pico (East of Avenida La Pata)	6 Lanes Divided	56,300	15,400	0.274	A
Calle Saluda	2 Lanes Undivided	12,500	4,300	0.344	A
SR-74 (West of La Novia Avenue)	4 Lanes Undivided	25,000	46,700	1.868	F
SR-74 (East of La Novia Avenue)	4 Lanes Undivided	25,000	46,700	1.868	F
Interstate 5 (North of SR-74)	8 Main Lanes + 2 HOV Lanes	180,000[2]	269,200	1.496	F
Interstate 5 (South of SR-74)	8 Main Lanes + 2 HOV Lanes	180,000[2]	297,700	1.654	F

Source: LLG 2015a,b
Key:
ADT = average daily traffic
HOV = high occupancy vehicle
LOS = level of service
SR-74 = State Route 74
Notes:
[1] Capacities based on Orange County Highway Design Manual Roadway Classification Table.
[2] Capacities based on City of San Diego Roadway Classification Table.
[3] During construction, partial closure of this roadway is required, which would lower the roadway capacity. As confirmed by SDG&E, the capacity of the roadway would be reduced by no more than half during construction. For the purposes of this analysis, the capacity was reduced by half.

4.15.1.4 Public Transit Systems and Pedestrian and Bicycle Trails

Bus Systems

OCTA manages bus services throughout Orange County. The overall bus network includes 77 bus routes. Bus routes within the proposed project area are described in Table 4.15-4. A bus stop serving Route 91 is located in front of Capistrano Substation on Camino Capistrano just north of Calle Bonita (OCTA 2014a, 2013a).

Table 4.15-4 Bus Routes within the Proposed Project Area

Jurisdiction	Roadway	Bus Route(s)	Project Component[1]
City of San Juan Capistrano	Camino Capistrano	91, 191	San Juan Capistrano Substation, Transmission Line Segment 1a; 12-kV Line Segments A, B
	Junipero Serra Road	91	San Juan Capistrano Substation; Distribution Line Segments A through L
	Rancho Viejo Road	91, 191, 212, 216	Transmission Line Segment 1b; 12-kV Segments D through L
	SR-74	191	Transmission Line Segment 1b; 12-kV Segment F
	Calle Arroyo	191	Transmission Line Segment 1b

Table 4.15-4 Bus Routes within the Proposed Project Area

Jurisdiction	Roadway	Bus Route(s)	Project Component[1]
	La Novia Avenue	191	Transmission Line Segment 1b; 12-kV Segment F
City of San Clemente	Avenida Pico	91, 191, 193	Transmission Line Segments 3, 4; Talega Substation, 12-kV Segments M
	Avenida La Pata	191, 193	Transmission Line Segment 3
	Calle Del Cerro	191	Transmission Line Segments 3, 4; Talega Substation
	Avenida Vista Hermosa	193	Transmission Line Segment 3

Source: OCTA 2014a
Key:
kV = kilovolt
SR-74 = State Route 74
Note:
[1] Relation to proposed project components can include construction access routes, adjacency to bus route, and/or cross roadway. Table 4.15-1 contains additional information on each roadway's relation to proposed project components.

Railroads

The Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor) travels through six counties in the coastal region of Southern California. In Orange County, the OCTA is the current owner of the LOSSAN Corridor. The previous owner, Burlington Northern and Santa Fe Railway (BNSF), still maintains a permanent use easement for freight service operation along the corridor (Caltrans and USDOT Federal Railroad Administration 2003; San Juan Capistrano 1999). There are three rail stations along the LOSSAN Corridor within the city of San Clemente and the city of San Juan Capistrano. San Juan Capistrano Station is located at 26701 Verdugo Street near Camino Capistrano. The city of San Clemente has two rail stations: the San Clemente Station, located at 1850 Avenida Estacion, and the San Clemente Pier Station, located at 615 Avenida Victoria.

Metrolink, operated by the Southern California Regional Rail Authority (SCRRA), provides commuter rail service along the LOSSAN Corridor. Rail stations in the city of San Juan Capistrano and the city of San Clemente are served by Metrolink Inland Empire-Orange County Line and the Orange County Line (OCTA 2013a; Metrolink 2014). All construction activities within the SCRRA operating corridor and right-of-way (ROW) or work activities that affect the operation or safety of trains must be reviewed and approved by SCRRA through an ROW encroachment process (SCRRA Metrolink 2013). SCRRA encroachment agreements require temporary traffic control plans for any traffic control affecting at-grade crossings and disrupting normal operation of at-grade crossing protection. Temporary traffic control plans shall meet Caltrans' California Manual of Uniform Traffic Control Devices, Southern California Chapter of the American Public Works Associations' Work Area Traffic Control Handbook, and SCRRA Temporary Traffic Control Guidelines for Highway-Rail Grade Crossings and Engineering Standard ES4301 "Temporary Traffic Control Work at or near Grade Crossing." Traffic control plans are required to be submitted to SCRRA for review and written approval prior to initiating any construction activity (SCRRA Metrolink 2010).

Amtrak provides passenger rail service along the LOSSAN Corridor within the vicinity of the proposed project area. Amtrak's Pacific Surfliner provides an alternative to Metrolink for commuters traveling between Los Angeles Union Station and downtown San Diego. The San Juan Capistrano and San Clemente Pier stations are served by the Amtrak Pacific Surfliner (Amtrak 2014).

Transmission Line Segment 1a and 12-kilovolt (kV) Segment A would cross the LOSSAN Corridor utilized by BNSF, Metrolink, and Amtrak both underground and overhead west of the proposed San Juan Capistrano Substation and approximately 0.7 miles north of the San Juan Capistrano Station. The

SCRRA Right of Way Encroachment Process addresses train performance during construction. SCRRA confirmed that this type of construction work would not affect train service through the area. Construction details and requirements for operating within the right-of-way will be outlined with the applicant during the SCRRA Right of Way Encroachment Process. This type of construction will require an SCRRA qualified railroad flagger to signal construction to stop when a train approaches the construction area. Construction would be completed during the times that trains are not traveling through the construction area (Patel 2016).

The San Clemente Station and the San Clemente Pier Station are located along the coast approximately 2.8 and 2.9 miles from Transmission Line Segment 3.

Air Transportation

No airports or airstrips, public or private, are located within 2 miles of components of the proposed project. John Wayne Airport is located approximately 16 miles northwest of the existing Capistrano Substation. Several federally operated runways are located at Marine Corps Base (MCB) Camp Pendleton; the closest is located approximately 2.2 miles southeast of Talega Substation. The Marine Corps Air Station (MCAS) Camp Pendleton Airport Influence Area (AIA)[1] is located at the southern area of the base and extends into San Diego County and the City of Oceanside and Fallbrook community. The proposed project would not be located within the MCAS Camp Pendleton AIA.

As described in Chapter 2, "Project Description," helicopters may be used instead of ground equipment to complete transmission line structure assembly and erection, wire stringing, structure removal activities, and transportation of crews and materials. The following airports may be used for helicopter staging and landing zones for material pickup:

- Oceanside Airport (approximately 26 miles southeast of Talega Substation);
- Palomar Airport (approximately 32 miles southeast of Talega Substation); and
- Gillespie Field Airport (approximately 55 miles southeast of Talega Substation).

Helicopter fly yard locations are described in Section 2.4.8, "Staging Areas, Stringing Sites, Work Areas, and Helicopter Fly Yards."

Pedestrian and Bicycle Trails

Several existing bikeways, pedestrian trails, and unpaved hiking/equestrian/mountain biking trails are located within the proposed project area within the cities of San Juan Capistrano and San Clemente. Existing pedestrian and bicycle trails within the proposed project area are described in Table 4.15-5.

[1] The AIA is "the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses" (San Diego County Airport Land Use Commission 2008).

Table 4.15-5 Existing Bikeways and Unpaved Trails within the Proposed Project Area

Bikeway/Trail	Location	Adjacent Project Component
City of San Juan Capistrano		
Class I Bikeway (off-road, paved)	Camino Capistrano	San Juan Capistrano Substation, Transmission Line Segment 1a, 12-kV Segments A,B
Class II Bikeway (on-road, striped lanes)		
Class I Bikeway (off-road, paved)	Rancho Viejo Road	Transmission Line Segment 1b, 12-kV Segments D, E
Class I Bikeway (off-road, paved)	North and South of San Juan Creek	Transmission Line Segment 1b
Belford Marabella Trail	South of SR-74 and East of La Novia Avenue	Transmission Line Segment 1b, 12-kV Segment F
East and West Hunt Club Trails	North of SR-74	12-kV Segment F
East and West Hilltop Trails		
Siega Trail		
San Juan Creek Trail	North side of San Juan Creek	Transmission Line Segment 1b
Las Vaqueras Trail	South side of San Juan Creek	
Juliana Farms Trail	East of San Juan Creek Road	
La Mancha Trail	East of San Juan Creek Road	
City of San Clemente		
Class II Bikeway (on-road, striped lanes)	Avenida Vista Hermosa	Transmission Line Segment 3
Class II Bikeway (on-road, striped lanes)	Avenida La Pata	
Class II Bikeway (on-road, striped lanes)	Avenida Pico	Transmission Line Segments 3 and 4, 12-kV M, Talega Substation
Foster Ridgeline Trail	West of Avenida La Pata	Transmission Line Segment 3
Prima Deshecha North Trail	East of Avenida La Pata	
Prima Deshecha South Trail	East of Avenida La Pata	Transmission Line Segments 3 and 4, 12-kV M, Talega Substation
Cristianitos South Trail	East end of Avenida Pico	Transmission Line Segment 4, 12-kV M, Talega Substation
San Onofre State Beach Park		
San Onofre State Beach Park Trail	Western side of San Onofre State Beach Park	Transmission Line Segments 3, 4
County of Orange		
Class I Bikeway (off-road, paved)	Parallel to SR-74	12-kV Segment F
Class II Bikeway (on-road, striped lanes)	Intersection of SR-74 and La Pata Avenue	

Key:
kV = kilovolt
SR-74 = State Route 74
Source: San Juan Capistrano Engineering and Building Department 2007; OCTA 2013b; City of San Clemente 2013; County of Orange 2005

The city of San Clemente's Avenida Vista Hermosa, Avenida Pico, Avenida La Pata, Calle del Cerro, and Avenida Vista Montana are designated as Connector Pedestrian Routes, and Calle Saluda is designated as a Neighborhood Pedestrian Route. Connector Pedestrian Routes are sidewalks located along roadways with moderate to high average vehicular traffic that support institutional, industrial, and business complexes. Connector Pedestrian Routes usually have low pedestrian levels because of the remote locations and the lack of nearby destinations or accessible land uses directly adjacent to the sidewalks. Neighborhood Pedestrian Routes are sidewalks with low to moderate pedestrian levels located along roadways that support low to moderate density housing (City of San Clemente 2013).

In addition, several proposed unpaved hiking/equestrian/mountain biking trails are located within the proposed project area within the city of San Juan Capistrano. Proposed trails include: the Caballo Trail, La Novia Trail, and Golondrina Trail, Coyote Canyon Trail, Portola Pass Trail, Escuela Trail, and Prima Deshecha Trail and extensions of the Belford Marabella and Whispering Hills Trail. The proposed trails are adjacent to Transmission Line Segments 1b, 2, and 3 and 12-kV Segments E, F, and H through L. Proposed bikeways are also located within the proposed project area within the City of San Clemente. Proposed bikeways include a Class II bikeway as a northern extension to the existing Class II bikeway along Avenida La Pata, a Class III Bikeway along Calle Saluda, and an upgrade of the existing Class II bikeway on Avenida Vista Hermosa to a Class I bikeway. The proposed bikeways are adjacent to Transmission Line Segment 3 (San Juan Capistrano Engineering and Building Department 2007; City of San Clemente 2014).

4.15.2 Regulatory Setting

4.15.2.1 Federal

Federal Aviation Administration and Helicopter External-Load Operations

The Federal Aviation Administration (FAA) administers the Federal Aviation Regulations (Title 14 of the Code of Federal Regulations [CFR]). CFR Title 14, Part 133 establishes regulations for Rotorcraft External-Load Operations. All operators of rotorcraft (helicopters) with external loads, including the pilot, mechanics, and ground crew, must be certified Rotorcraft External-Load Operators pursuant to 14 CFR Part 133. The helicopters used must also be certified. Rotorcraft External-Load Operator Certificates are valid for 24 months. Operators are permitted to conduct external-load operations over densely populated areas or areas congested with structures and objects with FAA approval of a Congested Area Plan.

For the proposed project, Congested Area Plans would be approved by the Long Beach Flight Standards District Office. A portion of Transmission Line Segment 4 and Talega Substation are located within the San Diego Flight Standards District Office jurisdiction. Coordination with the San Diego Flight Standards District Office and MCB Camp Pendleton may be required, depending on the specific locations of helicopter operations. Site inspections of Congested Area Plan operational areas, including emergency landing areas, are generally completed by an FAA inspector for new plans or sites with which the inspector is not familiar. Monitoring of Congested Area Plan operation by an FAA inspector occurs intermittently to the extent that representatives are available and depending on risk levels associate with the project (Peters 2012).

In addition, all helicopter external-load operations must be conducted in conformance with the Rotorcraft Load Combination Flight Manual, which must be prepared by the operator and approved by the FAA. The approved Flight Manual will specify the types of external loads that may be carried (Class A though D), and maximum weight of external loads. The FAA requires that Flight Manual review be completed by a qualified FAA Aviation Safety Inspector who, whenever possible, has experience as an external-load pilot.

Holders of Rotorcraft External-Load Operator Certificates are inspected two to three times per year regardless of whether a Congested Area Plan is in operation. Additional inspections may be conducted if a Congested Area Plan is involved (Peters 2012). FAA inspectors conduct Ramp Inspections and Base Inspections as specified in 14 CFR Part 133. During Ramp Inspections, the attaching means and retraining device for external loads and pilots and personnel approved to operate the attaching means are inspected. Personnel proficiency with external-load operations may be observed. A ramp inspection is

generally an onsite surveillance of an actual external-load operation. During Base Inspections, operator records are inspected and interviews may be conducted.

Occupational Health and Safety Administration

The Occupational Safety and Health Administration (OSHA) administers Occupational Safety and Health Standards (CFR Title 29) that establish regulations for safety in the workplace and construction safety. CFR Title 29, Parts 1910.183 and 1926.551 establish regulations for helicopter use during construction. Qualified staff is required to brief the pilot and ground personnel regarding the plan of operation prior to each day of helicopter operation. Cargo hooks used for securing helicopter external loads must be tested electrically and mechanically prior to each day of operation. In addition, the standards address weight limitations, static charge dissipation, and signal systems between air and ground crews.

4.15.2.2 State

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for the oversight of state highways. Caltrans requires that all work done within a state highway ROW obtain an encroachment permit. Encroachment permits must also be obtained for transmission lines that span or cross any state roadways. In addition, Caltrans has the discretionary authority to issue special permits for the movement of vehicles/loads exceeding statutory limitations on the size, weight, and loading of vehicles contained in Division 15 of the California Vehicle Code. Completion of a Transportation Permit application is required for requests for such special permits (Caltrans 2013).

4.15.2.3 Regional and Local

Orange County Transportation Authority Congestion Management Program

OCTA is the Congestion Management Agency for Orange County and is responsible for the development, monitoring, and biennial updating of the Congestion Management Program (CMP). The CMP addresses issues associated with increasing congestion on regional highways and arterials. The 2013 Orange County CMP has established LOS E as the minimum acceptable LOS for the highway and roadway system designated by OCTA. SR-74 is part of the Orange County CMP network. If a roadway within the CMP network operates below the LOS E standard, and is located outside of an Infill Opportunity Zone,[2] a deficiency plan is developed.

The Orange County CMP also provides guidance for Traffic Impact Analysis (TIA). A TIA is required for all proposed development projects that generate 2,400 or more daily trips (OCTA 2013a). Based on the estimated construction schedule, construction of the proposed project would generate a peak of 262 ADT; therefore, a TIA would not need to be prepared for the proposed project (LLG 2015a, b).

The Orange County CMP provides performance measures for bus and commuter rail service based on:

- Vehicle headway – Vehicle headway is the time interval between vehicles. This standard allows passengers to gauge how long they will have to wait for the next vehicle. Target vehicle headways are 30 minutes for local bus routes and bus rapid transit limited and 60 minutes for

[2] The Infill Opportunity Zone is a specific area designated by a city or county that is within one-half mile of a major transit stop or high-quality transit corridor included in a regional transportation plan (California Government Code Section 65088.1[e]).

community bus routes. Express and rail feeder bus routes have a minimum target of two one-way trips per peak weekday period.

- Vehicle load – Vehicle load refers to the maximum number of passengers allowed on a service vehicle. OCTA vehicle loads should not exceed 130 percent of seating capacity during any one-hour peak period on local fixed routes or 100 percent of seating on any express bus trip.
- On-time performance – On-time performance is defined as no more than five minutes later than the scheduled departure time. OCTA's on-time performance standard at the system level is defined as 85 percent of the actual departure times will meet the definition of "on time."
- Service accessibility – Service accessibility is defined as the percentage of population in proximity to bus service. OCTA defines the service accessibility performance standard as 90 percent of the population having access to a bus route within a one-quarter mile, depending on the type of service (OCTA 2013a).

Guidance for Administration of the Orange County Master Plan of Arterial Highways

OCTA is also the administrator of the Master Plan of Arterial Highways (MPAH). The MPAH is an example of coordinated regional planning between the incorporated cities of Orange County and the County of Orange. The goal of the MPAH is to ensure that the regional arterial highway network is planned, developed, and preserved in order to supplement Orange County's freeway system and serves existing and adopted future land uses. The MPAH map is a key element in outlining Orange County's long-range transportation planning and policy objectives. Maintaining consistency with the MPAH map enables jurisdictions to be eligible for certain funding streams. Consistency is defined as city and county General Plan Circulation Elements maintaining an equivalent number of minimum through lanes on MPAH arterial highways. The *Guidance for Administration of the Orange County Master Plan of Arterial Highways* provides arterial highway MPAH capacity values. The capacity values are approximate figures for use at the General Plan level. LOS C is used for planning the arterial system link capacities with the intent of maintaining LOS D through intersections. A link is defined as the portion of roadway between two arterial intersections (OCTA 2012).

Within the proposed project area, the 2014 MPAH map designates Junipero Serra Road, a portion of Camino Capistrano, SR-74, La Novia Avenue, and Avenida La Pata (south of Avenida Pico) in the city of San Juan Capistrano and Avenida Vista Hermosa in the city of San Clemente as primary arterial highways. A primary arterial highway is defined as a four-lane divided highway accommodating 20,000 to 30,000 ADT using the LOS C capacity guideline. Avenida Pico and Avenida La Pata (north of Avenida Pico) in the City of San Clemente is designated as a major arterial highway. A major arterial highway is defined as a six-lane divided roadway accommodating 30,000 to 40,000 ADT using the LOS C capacity guideline (OCTA 2014b).

County of Orange General Plan Transportation Element

The County of Orange General Plan Transportation Element (2005) establishes county goals, objectives, policies, and implementation programs for transportation facility development within unincorporated areas to accommodate the county's growth. The County of Orange General Plan Transportation Element outlines the following policies that are relevant to the proposed project (County of Orange 2005):

Circulation Plan

Policy 1.2: *Apply conditions to land use development projects to ensure that the direct and cumulative impacts of these projects are mitigated consistent with established level of service policies.*

> ***Policy 3.1:*** *Maintain acceptable levels of service on arterial highways pursuant to the Growth Management Element of the General Plan.*
>
> ***Policy 3.2:*** *Ensure that all intersections within the unincorporated portion of Orange County maintain a peak hour level of service "D", according to the County Growth Management Plan Transportation Implementation Manual.*
>
> ***Policy 5.5:*** *Require as conditions of approval that the necessary improvements to arterial highway facilities, to which a project contributes measurable traffic, be constructed and completed within a specified time period or ADT/peak hour milestone to attain a Level of Service "D" at the intersections under the sole control of the County. LOS 'C' shall be maintained on Santiago Canyon Road links until such time as uninterrupted segments of the roadway (i.e., no major intersections) are reduced to less than three miles. For a detailed discussion of LOS policies, refer to Appendix IV-2 of the General Plan Appendices.*

The County of Orange Appendix IV-1 Growth Management Plan Transportation Implementation Manual provides clarification on how Traffic Level of Service Policies of the Growth Management Element are implemented on a project level. The Growth Management Plan Transportation Implementation Manual provides acceptable traffic analysis methodologies, minimum requirements of Growth Management traffic reports, and traffic monitoring surveys (County of Orange 2005).

The Growth Management Plan Transportation Implementation Manual defines the Traffic Level of Service Policy as follows:

> *Within three years of the issuance of the first use and occupancy permit for a development project or within five years of the issuance of a finished grading permit or building permit for said project, whichever occurs first, all necessary improvements to the highway system within the County's jurisdiction to which the project contributes measurable traffic shall be constructed and completed to attain Level of Service (LOS) "D" or better. LOS "C" shall be maintained on all uninterrupted links of three miles in length or more on Santiago Canyon Road until such time as uninterrupted segments (i.e. between major signalized intersections) are reduced to less than three miles* (County of Orange 2005).

City of San Juan Capistrano General Plan Circulation Element

Acceptable roadway service levels are identified in the City of San Juan Capistrano's General Plan Circulation Element. The Circulation Element also contains policies to improve the overall circulation with the City. The City of San Juan Capistrano's General Plan Circulation Element (1999) outlines the following policies that are relevant to the proposed project:

> ***Policy 2.1:*** *Encourage the increased use and expansion of public transportation opportunities.*
>
> ***Policy 3.1:*** *Provide and maintain an extensive trails network that supports bicycles, pedestrians, and horses, and is coordinated with those networks of adjacent jurisdictions.*
>
> ***Policy 4.4:*** *Apply creative traffic management approaches to address congestion in areas with unique problems, such as schools, businesses with drive-through access, and other special situations.*

The Circulation Element also outlines the performance criteria to assess the adequacy of the circulation system. Peak hour intersection data are used to establish the performance criteria for evaluation of volumes and capacities on the City's street network. In general, the *City of San Juan Capistrano General*

Plan specifies that the intersection LOS A though D are acceptable, but LOS E and F are not adequate unless exempted (City of San Juan Capistrano 1999; LLG 2015a, b).

City-designated "Hot Spots" are locations that experience unique congestion. The "Hot Spot" designations imply certain exceptions to the standard performance criteria and/or require a different traffic analysis. The City of San Juan Capistrano defines "Hot Spot" designations in three categories.

- *School Hot Spot: Location where the normal operation of an arterial highway would be affected by the presence of a school. School Hot Spots require traffic impact studies to address specific traffic impacts at the affected locations.*
- *Operations Hot Spot: Sections of roadway where closely spaced intersections or side friction caused by numerous driveways degrades the performance of the roadway compared to its theoretical carrying capacity. The Operations Hot Spots are locations where the standard ICU* [Intersection Capacity Utilization] *procedure does not fully depict the actual traffic characteristics. As a result, areas designated as Operations Hot Spots require a special traffic operations analysis in addition to the ICU analysis. The maximum volume-to-capacity (V/C) ratio is 1.00 for Operations Hot Spots.*
- *Space Constrained Hot Spot: Intersections or sections of roadway that cannot be improved to their full standard due to limited space (right-of-way, or other constraints). The City sets a maximum ICU ratio of 1.00 for Spaced Constrained Hot Spots* (City of San Juan Capistrano 1999).

School Hot Spots and Operations Hot Spots are located in the proposed project area. School Hot Spots are located on San Juan Creek Road east of the La Novia Avenue intersection, La Novia Avenue between SR-74 and Calle Arroyo, Camino Capistrano north of the SR-74 intersection, and Oso Road west of Avenida De La Vista. Operations Hot Spots are located along SR-74 at the intersection of I-5 and Del Obispo at the intersection of Camino Capistrano (City of San Juan Capistrano 1999).

City of San Clemente Centennial General Plan Mobility and Complete Streets Element

The City of San Clemente Centennial General Plan Mobility and Complete Streets Element (2014) focuses on promoting multimodal transportation and a Complete Streets perspective. The Mobility and Complete Streets Element outlines the following policies that are relevant to the proposed project (City of San Clemente 2014a):

> ***Policy M-1.01. Roadway system.*** *We require the City's roadways to:*
>
> *c. Comply with OCTA requirements for arterial highways as determined through the MPAH and Measure M. Maintain at least a Level of Service (LOS) D or better at all intersections, except where flexibility is warranted based on a multi-modal LOS evaluation, or where LOS E is deemed appropriate to accommodate complete streets facilities.*
>
> ***M-1.04. Level of Service.*** *When the City determines there is a suitable tool available, we will measure and evaluate roadway performance from a multimodal, Complete Streets perspective.*
>
> ***M-1.05. Development Project Impacts.*** *We require development projects to analyze potential off-site traffic impacts and related environmental impacts through the CEQA process and to mitigate adverse impacts to less-than-significant levels.*
>
> ***M-1.18. Streetscapes and Major Roadways.*** *During the design, construction or significant modification of major roadways, we will promote scenic parkways or corridors to improve City's*

visual quality and character, enhance adjacent uses, and integrate roadways with surrounding districts. To accomplish this, the City will:

e. Encourage and where possible, require undergrounding or stealthing of overhead utility lines and equipment, cellular facilities and related groundmounted structures.

M-1.25. Regional Access to Arterial Streets. *New development contributing traffic to City Arterials, including development projects outside the City including, but not limited to, Rancho Mission Viejo shall be required to mitigate all traffic impacts to be consistent with adopted LOS standards contained in the City's Mobility and Complete Streets Element.*

M-1.26. Major and Minor Scenic Corridors. *We require the following roadways be maintained and preserved as major or minor scenic corridors with key entry points:*

a. Avenida Vista Hermosa

b. Avenida La Pata

c. Avenida Pico

j. Calle del Cerro

k. Avenida Vista Montana

M-1.28. Urban and Recreation Corridor designations. *We seek to create and distinguish different roadway characteristics for Urban and Recreation corridors throughout the City. Distinctions between urban and recreation corridors will be included in the updated Master Plan for Scenic Corridors, and will establish a scenic hierarchy and an overall visual framework for the City.*

M-1.29. New Scenic Corridors or Highways. *Expand or designate new scenic highways where protection of community resources warrants their preservation and/or protection.*

M-1.30. Protection of Scenic Corridors. *We ensure that development is sited and designed to protect scenic corridors and open space/landscape areas by blending man-made and man-introduced features with the natural environment.*

M-2.13. Bicycle and Pedestrian Network. *We plan, develop and maintain a comprehensive bicycle and pedestrian network as specified in the San Clemente Bicycle and Pedestrian Master Plan.*

M-2.14. Bicycle Friendly Streets. *We consider every public street in San Clemente as a street that cyclists could use.*

M-2.16. Roadway Performance Evaluation. *We shall evaluate roadway level of performance from a multi-modal, Complete Streets perspective.*

M-2.39. Roadway Repairs. *When roadway repairs are done by the City or other agencies, such as utility companies, the roadway shall be restored in accordance with City standards, with restriping suitable for bicycle use, as appropriate.*

M-2.42. Consistency with Bicycle and Pedestrian Master Plan. *We review all new capital improvement projects and private development projects to ensure consistency with the Bicycle and Pedestrian Master Plan and with the Mobility and Complete Streets Element.*

M-5.01. Truck and Freight Movements. *We will continue to implement a program which allows efficient freight movement while minimizing negative impacts on local roads and noise-sensitive land uses by identifying and implementing vehicle weight restrictions on designated streets.*

Chapter 10.36, Weight Limits and Truck Routes, of the City of San Clemente Code of Ordinances provides more detail regarding the City's truck routes. Ordinance 10.36.010 Truck Routes also proclaims

that the provisions in the Ordinance shall not apply to: "any vehicle owned by a public utility while necessarily in use in the construction, installation or repair of any public utility" (City of San Clemente 2014b).

Avenida Vista Hermosa, Avenida La Pata, Avenida Pico, Calle del Cerro, and Avenida Vista Montana are designated as Scenic Corridors in the City of San Clemente Mobility and Complete Streets Element. For more information on scenic corridors in the proposed project area, see Section 4.1, "Aesthetics" of this Environmental Impact Report and the City of San Clemente Centennial General Plan (City of San Clemente 2014a).

4.15.3 Impact Analysis

4.15.3.1 Methodology and Significance Criteria

Significance criteria for assessing the proposed project's impacts on transportation and traffic were defined based on the checklist items presented in Appendix G of the CEQA Guidelines. The proposed project would cause a significant impact on transportation and traffic if it would:

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system including, but not limited, to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

b) Conflict with an applicable congestion management program including, but not limited to, LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

e) Result in inadequate emergency access; or

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The following sections discuss the methodology used to assess traffic conditions, thresholds of significance, and the potential for associated impacts.

Traffic Study Methodology

The traffic generated from the construction of the proposed project would increase the volume of traffic on area roadways. To assess impacts associated with this additional traffic, Linscott Law and Greenspan Engineers (LLG) assessed traffic volumes on area roadways in Year 2015 and Year 2015, plus proposed project traffic volumes ~~(Year 2020)~~.

Project Trip Generation/Distribution

The construction phase of the proposed project would generate a peak of 41 cars/vans/pickup roundtrips and 30 truck round trips per day based on the estimated construction workforce and schedule prepared by

the San Diego Gas and Electric Company (SDG&E, or the applicant) (SDG&E 2012). These amounts represent where different phases of construction overlap with respect to location and construction schedule. These roundtrips were multiplied by two to account for one-way incoming and one-way outgoing trips.

A Passenger Car Equivalent (PCE) factor was applied to the generated truck trips in the analysis. PCE is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing conditions. Heavy vehicles have a greater traffic impacts than passenger cars because they are larger than passenger cars and therefore occupy more roadway space, and because their performance characteristics are generally inferior to those of passenger cars, leading to the formation of downstream gaps in the traffic stream (especially on upgrades), which cannot always be effectively filled by normal passing maneuvers. A PCE of 3.0 was applied to trucks.

With the application of the PCE, the worst case construction trip generation is 262 ADT.[3] For the purposes of LLG's traffic study, to represent the worst-case scenario, the 262 ADT was distributed to the local roadways affected by the proposed project.

Roadway Segment LOS Analysis

The most recent available existing ADT volumes for the local arterial roadway segments affected by the proposed project (except Golf Club Drive, which is not anticipated to receive a large amount of construction-generated traffic) were obtained from the following documents (LLG 2015a, b):

- South Orange County Reliability Enhancement Project Proponent's Environmental Assessment Report (May 2012);
- The Ranch Plan Environmental Impact Report Traffic Report (May 2004);
- Orange County Transportation Authority 2013/14 Traffic Flow Map;
- City of San Juan Capistrano Volumes Map (Public Works Department, 2012);
- City of San Clemente 2010 General Plan Update; and
- 2013 Traffic Volumes on California State Highways (Caltrans).

Traffic data are available for arterial roads but not for collector roads. Collector roads are not regularly used for through traffic, and as a result, traffic is generally low. ADT volumes were also obtained through traffic counts for roadways that would experience partial ~~or full~~ closure during construction of the proposed project.

Roadway segment LOS analysis was conducted for the local roadway network to evaluate potential traffic impacts on the local roadway system from traffic generated during construction of the proposed project. Due to the temporary nature of construction, conducting daily roadway segment LOS analysis is sufficient methodology. Therefore, a peak hour intersection analysis was not performed for the proposed project.

[3] 262 ADT = 2 one-way trips x [(41 car/van/pickup trips x 1.0 PCE) + (30 truck trips x 3.0 PCE)]

4.15.3.2 Applicant Proposed Measures

The applicant has committed to the following applicant proposed measures (APMs) as part of the design of the proposed project. See Section 2.6.2, "Applicant Proposed Measures," Table 2-10, for a full description of each APM.

APM TR-1: Avoid Traffic Near Schools. Construction-generated traffic associated with San Juan Capistrano Substation and construction of the 138-kV getaways (new underground cable packages and new Pole Nos. 1a through 7a) would avoid the start and ending time for the Saddleback Valley Christian School and the JSerra Catholic High School. Workers would arrive at construction sites by 7:30 AM and would not leave prior to 3:30 PM.

APM TR-2: Avoid SR-74 Traffic. Construction-generated traffic associated with San Juan Capistrano Substation and construction of the 138-kV getaways (new underground cable packages and new pole Nos. 1a through 7a) would avoid the SR-74 off ramp from I-5. Avoidance of the SR-74 and I-5 interchange would ensure that construction-generated traffic would not exacerbate existing conditions on the stretch of road between the intersections of SR-74 and Rancho Viejo Road and SR-74 and Del Obispo.

APM TR-3: Emergency Access. SDG&E would coordinate with local emergency response agencies during all construction within existing roadways. Coordination with local emergency response agencies (such as Orange County Sheriff's Department and Orange County Fire Authority) would ensure that impacts on emergency access are less than significant.

APM TR-4: Off-Peak Deliveries. Deliveries would be scheduled during off-peak traffic periods to reduce trips during the most congested periods of the day.

APM TR-5: Material Removal, City Streets. For any underground work along city streets, materials would be removed from work areas on a daily basis to minimize traffic impacts.

APM TR-6: Helicopter Use. When helicopters are in use for construction activities, designated fly yards would be kept clear of all other construction activity. If helicopters are used during construction of the proposed project, existing helicopter landing areas would be used wherever feasible. Helicopter landing areas along the existing ROW would be located away from residences and other land uses (generally at least one mile from sensitive noise receptors).

APM TR-7: Traffic Control Plans. Contractors working for SDG&E would develop specific traffic control plans immediately prior to the start of construction that adhere to the Standard Traffic Control Procedure from the authority having jurisdiction (federal, state, county, city, or municipality) of the roadway being impacted. The traffic control plans would be created for the various construction phases of San Juan Capistrano Substation, underground transmission and underground distribution segments leaving San Juan Capistrano Substation, and overhead transmission.

The approved traffic control plans would describe lane closures and other methods for reducing adverse construction-related traffic impacts and require SDG&E to coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles, to ensure that emergency vehicle access is maintained and that impacts on traffic flow are minimized.

All traffic control plans would be developed, reviewed, and approved by the authority having jurisdiction of the specific roadway being impacted. The traffic control plans would include vehicular and non-vehicular traffic and would be communicated to the public at least 48 hours in advance of the traffic control measures being installed in the roadway or as required by the traffic control permit.

4.15.3.3 Impact Analysis

Impact TT-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
LESS THAN SIGNIFICANT WITH MITIGATION

Construction and Restoration

Roadways

During construction of the proposed project, partial ~~or full~~ road closures would occur on the following roadways:

- ~~Camino Capistrano (Partial or full closure);~~
- Vista Montana (Partial closure);
- Via Pamplona (Partial ~~or full~~ closure); and
- Calle San Diego (Partial ~~or full~~ closure).

~~Two of the four lanes on Vista Montana would be closed to traffic. For Camino Capistrano, Via Pamplona, and Calle San Diego, there are no further details on the number of lanes that would be closed for construction. For the purposes of this analysis, partial closures were assumed to remove half the capacity of the roadway.~~For Vista Montana and Via Pamplona, no more than half of the roadway would be closed to traffic at a time. Lane closures on Vista Montana and Via Pamplona would be required for no longer than five days at each location. Since Calle San Diego is a two-lane roadway and full closure is not required, partial closure was assumed to be half the capacity of the roadway.

Table 4.15-6 shows the Year 2015 daily roadway segment operations for arterials and the Year 2015 daily roadway segment operations with the proposed project construction traffic.

Table 4.15-6 Year 2015 Roadway Segment Operations

Roadway	Existing Capacity (LOS E)[1]	Year 2015			Year 2015 + Project		
		Existing ADT	V/C	Existing LOS	ADT	V/C	Existing LOS
Junipero Serra Road	25,000	14,700	0.588	A	14,962	0.598	A
Camino Capistrano (North of SR-74)	18,750	15,200	0.811	D	15,462	~~1.237~~0.825	~~F~~D
Camino Capistrano (South of SR-74)	25,000	18,900	0.756	C	19,162	~~1.533~~0.766	~~F~~C
Rancho Viejo Road	25,000	14,100	0.564	A	14,362	0.574	A
Calle Arroyo	25,000	7,800	0.312	A	8,062	0.322	A
San Juan Creek Road	12,500	11,500	0.920	E	11,762	0.941	E
La Novia Avenue	12,500	14,000	1.120	F	14,262	1.141	F
Via Pomplana	12,500[3]	700	0.056	A	962	0.154	A
Vista Montana	37,500[3]	6,700	0.179	A	6,962	0.557	A
Calle San Diego	12,500[3]	800	0.064	A	1,062	0.170	A

Table 4.15-6 Year 2015 Roadway Segment Operations

Roadway	Existing Capacity (LOS E)[1]	Year 2015			Year 2015 + Project		
		Existing ADT	V/C	Existing LOS	ADT	V/C	Existing LOS
La Pata Avenue	12,500	5,300	0.424	A	5,562	0.445	A
Avenida la Pata (North of Avenida Pico)	56,300	6,600	0.117	A	6,862	0.122	A
Avenida la Pata (South of Avenida Pico)	37,500	9,900	0.264	A	10,162	0.271	A
Avenida Vista Hermosa	37,500	31,900	0.851	D	32,162	0.858	D
Calle Del Cerro	12,500	15,400	1.232	F	15,662	1.253	F
Avenida Vista Montana	12,200	6,600	0.528	A	6,862	0.549	A
Avenida Pico (West of Avenida La Pata)	56,300	51,700	0.918	E	51,962	0.923	E
Avenida Pico (East of Avenida La Pata)	56,300	15,400	0.274	A	15,662	0.278	A
Calle Saluda	12,500	4,300	0.344	A	4,562	0.365	A
SR-74 (West of La Novia Avenue)	25,000	46,700	1.868	F	46,962	1.878	F
SR-74 (East of La Novia Avenue)	25,000	46,700	1.868	F	46,962	1.878	F
I-5 (North of SR- 74)	180,000[2]	269,200	1.496	F	269,462	1.497	F
I-5 (South of SR- 74)	180,000[2]	297,700	1.654	F	297,962	1.655	F

Source: LLG 2015a, b

Key:
ADT = Average Daily Traffic
LOS = level of service
SR-74 = State Route 74
V/C = volume-to-capacity

Notes:
1 Capacities based on Orange County Highway Design Manual Roadway Classification Table.
2 Capacities based on City of San Diego Roadway Classification Table.
3 During construction, partial ~~or full~~ closure of this roadway is required, which would lower the roadway capacity. As confirmed by SDG&E, the capacity of the roadway would be reduced by no more than half during construction. For the purposes of this analysis, the capacity was reduced by half.

As shown in Table 4.15-6, with the addition of the proposed project traffic, there is no change in the daily roadway segment operations LOS in the Year 2015 scenario~~, with the exception of Camino Capistrano. Due to proposed lane closures during construction, construction traffic would degrade roadway segment operations on Camino Capistrano to an unacceptable LOS of F~~. The *City of San Juan Capistrano General Plan Circulation Element* specifies that an intersection with LOS A though D is acceptable, but LOS E and F are not adequate. Intersection LOS is directly affected by roadway segment operations.

Partial lane closures along Via Pamplona and Calle San Diego would not significantly degrade roadway segment operations. ~~However, full road closures of Camino Capistrano, Via Pamplona, and Calle San Diego would significantly impact roadway segment operations. To address this, t~~The applicant would implement APM TR-1, APM TR-2, APM TR-4, and APM TR-7, which would require the applicant to avoid generating traffic near Saddleback Valley Christian School, JSerra Catholic High School, the SR-74 off-ramp from I-5, and during peak traffic hours, as well as prepare a Traffic Control Plan. Per CEQA, since there is no degradation in the study roadway segment operations LOS to an unacceptable LOS with the addition of project traffic and the reduction in roadway capacity, no significant impacts occur at Via

Pamplona and Calle San Diego. In addition, the short duration of the lane closures is further evidence that the impact would not rise to a significant level. However, flagging operations associated with the partial road closures of Via Pamplona and Calle San Diego could result in long traffic delays throughout the duration of the flagging operations, but would not create a significant impact on LOS. In addition, traffic delays as a result of flagging operations would be minimized to the extent possible through the implementation of APM TR-7. ~~; however, impacts would remain significant. Mitigation Measure (MM) TR-1 would require the applicant to provide notification to drivers and nearby residents of upcoming lane and road closures. Implementation of MM TR-1 would reduce the impact from partial and full lane closures, but impacts from full road closures would remain significant.~~

Additionally, the *City of San Juan Capistrano General Plan Circulation Element* designates "Hot Spot" locations that experience unique congestion. Hot Spots are described in Section 4.15.2.2. "Hot Spot" designations imply certain exceptions to the standard performance criteria and/or require a different traffic analysis. LLG's LOS segment analysis evaluated traffic impacts at School Hot Spots and Operation Hot Spots in the proposed project area. Therefore, ~~LLG's LOS segment analysis (Appendix I) satisfies the City of San Juan Capistrano General Plan requirement that a traffic analysis be completed for designated Hot Spot areas.~~ A peak-hour intersection analysis was conducted for the four intersections along Vista Montana to satisfy the City of San Juan Capistrano General Plan requirement that traffic analysis be completed for designated Hot Spot areas. The intersections include:

1. Vista Montana / Via Pamplona
2. Vista Montana / San Juan Hills High School Driveway
3. Vista Montana / Via Granada
4. Vista Montana / La Pata Avenue

Table 4.15-7 shows the near-term cumulative (Year 2020) intersection operations along Vista Montana. Peak hour intersection turning movement traffic counts were conducted in May 2015 when school was in session. The peak hour counts were conducted between the hours of 6:00 to 8:00 AM and 2:00 to 4:00 PM. (LLG 2015b, Appendix Q). An overall 10 percent growth was observed between the existing and near-term cumulative (Year 2020) study segment volumes. This growth factor was applied to the existing intersection volumes to forecast near-term cumulative (Year 2020) intersection volumes. The project is estimated to generate 262 daily trips (2 x 131 one-way trips). For the purposes of this study, to represent the worst-case scenario, 131 incoming trips were distributed to Vista Montana during the school AM peak hour and 131 outgoing trips were distributed to Vista Montana during the school PM peak hour.

SDG&E provided draft detailed traffic control plans for the seven phases of construction along Vista Montana. For the analysis of the near-term cumulative (Year 2020) with project scenario, the lane geometry for Phase 2 was assumed since it represented the worst-case scenario with the most lane closures and movement restrictions at the intersections along Vista Montana. The lane closures and restrictions for each intersection during Phase 2 are described in Appendix Q.

Table 4.15-7 Near-Term Cumulative (Year 2020) Intersection Operations

Intersection	Control Type	Peak Hour	Existing		Near-Term Cumulative (Year 2020) without Project		Near-Term Cumulative (Year 2020) with Project	
			Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS
Vista Montana / Via Pamplona	OWSC	AM	19.6	C	24.1	C	20.8	C
		PM	17.6	C	20.4	C	23.7	C
Vista Montana / San Juan Hills High School Driveway	OWSC	AM	67.4	F	91.8	F	43.5 [b]	E[b]
		PM	>100	F	>100	F	26.8 [b]	D[b]
Vista Montana / Via Granada	OWSC	AM	11.8	B	12.3	B	71.6	F
		PM	15.3	C	17.9	C	52.9	F
Vista Montana / La Pata Avenue	Signal	AM	>100	F	>100	F	>100	F
		PM	19.2	B	21.7	C	21.7	C

Source: LLG 2015b
Key:
OWSC = Two-Way Stop Controlled intersection
LOS = Level of Service
Notes:
a. Average delay expressed in seconds per vehicle.
b. The prohibition of left turns at this intersection during construction causes a significant amount of out-of-direction travel at this intersection, which is not reflected in the delay and LOS.

The proposed project would result in the following Vista Montana intersections operating at an unacceptable LOS:

- Vista Montana / Via Granada
- Vista Montana / La Pata Avenue
- Vista Montana / San Juan Hills High School Driveway

Impacts along Vista Montana would be mitigated to less than significant with the implementation of MM TR-5 which would require the applicant to schedule road closures along Vista Montana on days that San Juan Hills High School is not in session and require construction workers to avoid traveling along Vista Montana during the periods of 6:00 to 8:00 AM and 2:00 to 4:00 PM on days that San Juan Hills High School is in session. Implementation of MM TR-5 would reduce impacts on the LOS of Vista Montana to less than significant.

Bicycle and Pedestrian Paths

The County of Orange General Plan Transportation Element has a series of policies that support the County's Bikeway Plan. The City of San Juan Capistrano's General Plan includes several policies focused on promoting an advanced transportation network and providing an extensive bicycle, pedestrian, and equestrian trails network. Similarly, the City of San Clemente Mobility and Complete Streets Element and Bicycle and Pedestrian Master Plan also include policies encouraging multi-modal transportation options, including a comprehensive bicycle and pedestrian network. The City of San Clemente Mobility and Complete Streets Element includes Policy M-2.16 Roadway Performance Evaluation, which states that the roadway level of performance shall be evaluated from a multi-modal, Complete Streets perspective. However, a Multi-Modal LOS or other metric has not been validated or adopted to evaluate multi-modal facilities performance; thus, a qualitative or quantitative assessment of impacts on these facilities is not possible. In general, the proposed project would not conflict with

policies governing transit, pedestrian, bicycle, and equestrian facilities. While construction of certain proposed project components would affect bikeways and pedestrian trail infrastructure (see discussion under Impact TT-6), any impact on these facilities would be short term and would have a less than significant conflict with applicable plans, ordinances, or policies.

Transit

As Orange County's transit provider, OCTA provides CMP performance measures for bus and commuter rail service. OCTA's Performance Standards and Policies include standards for vehicle headway, vehicle load, on-time performance, and service accessibility. The proposed project is located in the vicinity of several bus routes. A bus stop serving Route 91 is located in front of Capistrano Substation on Camino Capistrano just north of Calle Bonita. However, during construction of the proposed project, any full or partial road closures on Camino Capistrano would be coordinated under the Traffic Control Plan (APM TR-7), and Route 91 and 191 buses would be rerouted temporarily if needed. Therefore, any impacts on CMP performance measures for buses such as vehicle headway and on-time performance would be less than significant and temporary.

Metrolink and Amtrak have trains that travel through the LOSSAN Corridor within the vicinity of the proposed project area. Transmission Line Segment 1a and 12-kV Segment A would cross the railroad tracks utilized by BNSF, Metrolink, and Amtrak both underground and overhead west of the proposed San Juan Capistrano Substation and approximately 0.7 miles north of San Juan Capistrano Station. All construction activities within the SCRRA operating corridor and ROW or work activities that affect the operation or safety of trains must be reviewed and approved by SCRRA through an ROW encroachment process. As part of the ROW encroachment process, SCRRA reviews the encroachment application and plans for compliance with technical and safety regulations and any issue determined to impact safety or railroad operations. Therefore, obtaining SCRRA approval for construction within the SCRRA operating corridor and ROW would ensure that construction of Transmission Line Segment 1a over the railway and under the railway via jack and bore trenching would have a less than significant impact on OCTA CMP performance measures for commuter rail service.

Operation and Maintenance

Operation and maintenance activities associated with the proposed project would be similar to those associated with the existing substations, transmission, and distribution lines operation and maintenance activities. Therefore, operation and maintenance of the proposed project would have no impact on applicable plans, ordinances, and policies associated with the performance of the circulation system.

Impact TT-2: **Conflict with an applicable congestion management program including, but not limited to, LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.**
LESS THAN SIGNIFICANT

The 2013 CMP for Orange County addresses the impact of local growth and issues associated with increasing congestion on the regional transportation system by establishing the minimum acceptable LOS. Highway system intersections must maintain an LOS of E or better, unless the baseline is lower than LOS E. If the baseline is lower than LOS E, then the intersection capacity utilization rating cannot increase by more than 0.10. SR-74 is part of the Orange County CMP network, and the I-5 Northbound and Southbound junctions with SR-74 are CMP Highway System intersections. SR-74 operates at LOS F, and the I-5 North and South of SR-74 operates at LOS F in the Year 2015 with and without the proposed project traffic scenarios, as shown in Table 4.15-5. During construction of the proposed project, 262

ADT is anticipated. As a result, the proposed project would not increase the intersection capacity rating by more than 0.10 and is exempt from the requirements of the CMP TIA because the proposed project would generate less than 2,400 daily trips.

In addition to the development and implementation of the Traffic Control Plan (APM TR-7), the applicant would avoid generating traffic on the SR-74 off-ramp from I-5 (APM TR-2) and would only accept deliveries during off-peak hours (APM TR-4) to ensure that conflicts with congestion management programs and standards are avoided. The construction and restoration of the proposed project would not conflict with the Orange County CMP; therefore, impacts under this criterion would be less than significant.

Operation and maintenance activities associated with the proposed project would be similar to those associated with the existing substations, transmission, and distribution lines operation and maintenance activities. Therefore, operation and maintenance of the proposed project would have no impact on Orange County CMP.

Impact TT-3: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
LESS THAN SIGNIFICANT WITH MITIGATION

No airports or airstrips, public or private, are located within 2 miles of components of the proposed project. John Wayne Airport is located approximately 16 miles northwest of the existing Capistrano Substation site. Several federally operated runways are located at MCB Camp Pendleton; the closest is located approximately 2.6 miles southeast of Talega Substation.

Helicopters may be used instead of ground equipment to complete transmission line structure assembly and erection, wire stringing, structure removal activities, and transportation of crews and materials. Airports that would be used for helicopter staging and landing zones for material pickup may include:

- Oceanside Airport (approximately 26 miles southeast of Talega Substation);
- Palomar Airport (approximately 32 miles southeast of Talega Substation); and
- Gillespie Field Airport (approximately 55 miles southeast of Talega Substation).

The applicant has identified the following four fly yards:

- Staging area at Prima Deschecha Landfill (Staging Area 2);
- Storage area immediately south of Margarita Substation;
- Storage area immediately west of Rancho Mission Viejo Substation; and
- Open space north of Talega Substation, where Avenida Pico becomes Cristianitos Road (Staging Area 5).

Helicopters may also land or refuel at Staging Areas 1 through 3 (see Figure 2-1 and Table 2-11), at any of the proposed pole work areas that would require helicopters for pole removal or installation, or at the applicant's substation sites identified in Section 2.4.8.1, "Staging Areas at the Applicant's Substation Sites." APM TR-6 states that the applicant would keep designated fly yards clear of all construction activity when helicopters are in use, and existing helicopter landing areas would be used wherever feasible. APM TR-6 also specifies that helicopter landing areas along the existing ROW would be

located away from residences and other land uses. If helicopters are used during construction, they would be used in accordance with SDG&E's specifications, which are similar to the methods detailed in Institute of Electrical and Electronic Engineers 951-1996 standard, *Guide to the Assembly and Erection of Metal Transmission Structures*, Section 9, Helicopter Methods of Construction.

SDG&E would submit a Congested Area Plan to FAA Long Beach Flight Standards District Office based on final helicopter operation 30 to 60 days prior to start of construction for helicopter external-load operations over populated areas or areas congested with structures or objects. A portion of Transmission Line Segment 4 and Talega Substation are located within the San Diego Flight Standards District Office jurisdiction. Coordination with the San Diego Flight Standards District Office and MCB Camp Pendleton may be required depending on the specific locations of helicopter operations. The FAA requires that all pilots, and crewmembers, and helicopters involved with external-load operations (e.g., lattice steel tower erection and wire stringing) be certified pursuant to 14 CFR 133 (External-Load Operations). Pursuant to FAA and OSHA requirements, briefings must be completed prior to each day of helicopter operation regarding the plan of operation for the pilot and all ground personnel. Additionally, cargo hooks used for securing helicopter external loads must be tested electrically and mechanically prior to each day of operation. Accidents and incidents associated with helicopter use must be reported immediately to the National Transportation Safety Board (NTSB).

Although SDG&E would operate and use helicopters for construction of the proposed project according to internal standards based on Institute of Electrical and Electronics Engineers Standard 951-1996, and the FAA would certify and inspect all pilots, mechanics, crewmembers, and helicopters, accidents or incidents at job sites could still occur. MM TR-2 and MM TR-3 would ensure that workers involved in construction activities that receive loads from helicopters or assist with loading helicopters are routinely trained to identify potentially unsafe conditions associated with helicopter external load size, attachment means, or loading/unloading methods. With implementation of APM TR-6, MM TR-2, and MM TR-3, impacts under this criterion during construction and restoration would be less than significant.

Operation and maintenance activities associated with the proposed project would be similar to those associated with the existing substations, transmission, and distribution lines operation and maintenance activities. Therefore, operation and maintenance of the proposed project would have no impact on air traffic.

Impact TT-4: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
LESS THAN SIGNIFICANT WITH MITIGATION

The proposed project would not require the construction of publicly accessible roads that would present a substantially hazardous design feature such as sharp curves or dangerous intersections. In addition, the proposed project would not introduce incompatible uses to area roadways (e.g., farm equipment). As described in Section 2.4.5.1, "Access Road Construction," SDG&E equipment and vehicles would use existing access roads to access the existing and proposed transmission line structures. Less than 0.5 mile of new access road/spur road segments would be constructed, and approximately 2.5 miles of existing access roads/spur roads would be widened as part of the proposed project. The new and widened roads would range from 14 to 20 feet wide. Public roads would also be used to access transmission and distribution line structures; however, none of the proposed project roadway components would result in changes to existing public roadway design, including intersections, alignment, lane configuration, or medians.

The delivery of specific project components, transformers to substation sites and underground splice vaults, would require the use of oversize and/or overweight vehicles. A transportation permit would be required on all vehicles exceeding the size and weight of a legal load, as defined by the California Vehicle Code. The permits would be obtained from the cities of San Juan Capistrano and San Clemente Orange County, and Caltrans. Caltrans has the discretionary authority to issue special permits for the movement of vehicles/loads exceeding statutory limitations on the size, weight, and loading of vehicles. The applicant would have to adhere to each jurisdiction's requirements and permitting process for the transport of oversize and/or overweight project components. Requirements for the transport of oversize and/or overweight permits may include "wide load" warning signs, use of a pilot vehicle, avoidance of travel during nighttime or inclement weather, use of designated truck routes, and repair of any damage to roadways/structures resulting from travel. The applicant would implement a Traffic Control Plan (APM TR-7), which would address the transport of oversize and/or overweight deliveries. Impacts from the transport of overweight and/or oversized project components would be less than significant through the compliance with applicable regulations.

With the exception of the access roads along Transmission Line Segments 1b, 3, and 4, and 12-kV Segments F and M, and existing access roads that merge with, cross, or run alongside unpaved trail segments, all proposed project access/spur roads would be located on private land and would be restricted from public access. Access roads along Transmission Line Segments 1b, 3, and 4, and 12-kV Segments F and M, that would merge with, cross, or run alongside unpaved trail segments could create a significant hazard from the construction vehicles traveling among trails users, such as bicyclists, equestrians, and pedestrians. MM TR-4 would require the applicant to submit its Traffic Control Plan to the City of San Juan Capistrano and City of San Clemente for review and incorporate any recommendations from this review related to bikeway, sidewalk, and unpaved trail facilities into the Traffic Control Plan. This would include any access/spur road that merges with unpaved trail segments. In addition, APM PS-2, Repair Damage to Public Facilities, will ensure any trails impacted during construction activities would be returned to an approximate pre-construction state following the completion of the proposed project. This would include trail realignments. SDG&E will make replacements of any trails in a timely manner. With the implementation of MM TR-4 and APM PS-2, the proposed project would have a less than significant impact on trail users because its associated access/spur roads would not substantially increase hazards due to a design feature. Therefore, the construction and restoration of the proposed project would have a less than significant impact with mitigation under this criterion.

Operation and maintenance activities associated with the proposed project would be similar to those associated with the existing substations, transmission, and distribution lines operation and maintenance activities. Therefore, operation and maintenance of the proposed project would have no impact road hazards.

Impact TT-5: Result in inadequate emergency access.
LESS THAN SIGNIFICANT

The proposed project would cause short-term, temporary impacts on traffic when the proposed transmission and distribution line segments would be installed across roadways and where construction would be conducted within a public roadway ROW. As noted in Section 2.4.9, "Roadway and Railway Crossings, Road Closures, and Traffic Control," the proposed transmission and distribution lines route would cross a number of roadways, including I-5. The applicant anticipates that traffic would be temporarily stopped when the sock line is flown by helicopter over a public road. A sock line is used for stringing conductor cable on utility poles (see Section 2.4.5.3, "Foundations, Assembly, and Wire Stringing"). Traffic would also be temporarily stopped in the event that an external load, such as the

section of a transmission line structure, is flown by helicopter over a public road. The temporary traffic stops would last a few minutes. The applicant would procure a permit from Caltrans to string new conductor across I-5. The applicant anticipates that the Caltrans permit would require that the netting be installed early on a Sunday morning when traffic is minimal and that the California Highway Patrol would assist with slowing traffic to allow for netting installation. Once the netting is in place, wire stringing would be possible during periods with greater traffic levels, as permitted. Therefore, temporary lane closures and/or travel lane reductions would be required for the construction of the transmission and distribution line segments. A series of local roads are also located adjacent to or crossed by transmission and distribution line segments.

The applicant would coordinate with local jurisdictions to ensure access for emergency vehicles. The applicant would implement APM TR-3 and APM TR-7, under which the applicant would coordinate with local emergency response agencies throughout construction and would prepare a Traffic Control Plan prior to construction to minimize short-term construction-related impacts on local traffic, including emergency access. Under the Traffic Control Plan (APM TR-7), SDG&E would coordinate with emergency service providers in advance of lane closures and other methods for reducing adverse construction-related traffic impact construction activities. Coordination with emergency service providers would avoid restriction of emergency vehicle movements and would ensure that emergency vehicle access is maintained and impacts to traffic flow are minimized. As a result, temporary full and partial closures associated with construction activities would not significantly lengthen the response time required for emergency vehicles passing through the construction zone because coordination with emergency service providers and emergency response agencies would ensure emergency vehicle access is maintained at all times. Therefore, construction and operation of the proposed project would not result in inadequate emergency access, and impacts would be less than significant.

Operation and maintenance activities associated with the proposed project would be similar to those associated with the existing substations, transmission, and distribution lines operation and maintenance activities. Therefore, operation and maintenance of the proposed project would have no impact on emergency access.

Impact TT-6: Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
LESS THAN SIGNIFICANT WITH MITIGATION

Extensive bicycle infrastructure and unpaved hiking/equestrian/mountain biking trails are present throughout the proposed project area, as detailed in Table 4.15-5. In some instances, bikeway and unpaved trail segments run alongside the proposed project, such as the Foster Ridgeline Trail along Transmission Line Segment 3. In other instances, a proposed project component crosses a bikeway or unpaved trail segment such as the Transmission Line Segment 1a crossing of the Class I/Class II Bikeway that runs alongside Camino Capistrano. Temporary bikeway, sidewalk, and trail closures would be required for the construction of the transmission and distribution line segments. The applicant anticipates that traffic, including bicycle and pedestrian movements, would be temporarily stopped when the sock line is flown by helicopter over a public road. Traffic would also be temporarily stopped in the event that an external load, such as the section of a transmission line structure, is flown by helicopter over a public road. The temporary traffic stops would last a few minutes.

Therefore, the proposed project would cause short-term, temporary construction-related impacts where the proposed transmission and distribution line segments cross or run parallel in close vicinity to bikeways, sidewalks, and unpaved trails. While construction of certain proposed project components

would affect bicycle and pedestrian infrastructure, any impact on these facilities would be short term and temporary and would not conflict with any applicable plan, program, or policy (see discussion under Impact TT-1). Additionally, the applicant would implement APM PS-~~3~~2 as described in Table 2-10, which would ensure that any damage done to area roadways, including bicycle lanes and sidewalks, resulting from construction work would be repaired following completion of project construction.

The proposed project area is also serviced by several public transit options. As discussed under Impact TT-1, the proposed project would be located in the vicinity of several bus routes, along with Metrolink and Amtrak rail routes. During construction of the proposed project, it is anticipated that any full or partial road closures on Camino Capistrano would be coordinated under the Traffic Control Plan (APM TR-7), and the Route 91 and 191 buses would be rerouted temporarily if needed. As a result, any impacts on CMP performance measures for buses such as vehicle headway and on-time performance would be less than significant and temporary.

Transmission Line Segment 1a and 12-kV Segment A would cross the railroad tracks utilized by BNSF, Metrolink, and Amtrak both underground and overhead west of the proposed San Juan Capistrano Substation and approximately 0.7 miles north of San Juan Capistrano Station. The work within the SCRRA operating corridor is expected to last approximately four weeks and will be broken up into several segments to minimize the impact to trains operating within the LOSSAN Corridor. The applicant would obtain SCRRA approval for construction within the SCRRA operating corridor and ROW. Compliance with any conditions of the SCRRA would ensure that construction of Transmission Line Segment 1a over the railway and under the railway via jack and bore trenching would be conducted to ensure the safety of commuter rail service and comply with railroad protocols. The SCRRA Right of Way Encroachment Process also addresses train performance during construction. SCRRA confirmed that this type of construction work would not affect train service through the area. Construction details and requirements for operating within the ROW will be outlined with the applicant during the SCRRA Right of Way Encroachment Process. This type of construction will require an SCRRA qualified railroad flagger to signal construction to stop when a train approaches the construction area. Construction would be completed during the times that trains are not traveling through the construction area (Patel 2016). As a result, no impact to train performance would occur.

As part of the proposed project, the applicant would implement APM TR-7, Traffic Control Plan, during project construction to minimize short-term construction-related impacts on bicycle, pedestrian, and public transit facility performance or safety. Under APM TR-7, all construction work would be coordinated with affected local agencies to prevent negative effects to these facilities. Through coordination with local agencies, the Traffic Control Plan would include provisions for temporary alternate routes to route local bicycle, pedestrian, and bus traffic around construction zones, thus minimizing potential conflicts with existing plans and inconveniences to pedestrians, cyclists, and bus riders.

Therefore, with the implementation of APM TR-5, APM TR-7, and APM PS-~~3~~2, construction activities would not interfere with the safety and performance of bicycle and pedestrian facilities, and impacts would be less than significant under this criterion.

Operation and maintenance activities associated with the proposed project would be similar to those associated with the existing substations, transmission, and distribution lines operation and maintenance activities. The realignment of poles and the presence of new poles would not significantly impact the performance and safety of bicycle and pedestrian facilities as implementation of APM PS-2 would address any changes to the facilities from the existing baseline. Therefore, operation and maintenance of

the proposed project would have no impact on the safety and performance of bicycle and pedestrian facilities.

4.15.4 Mitigation Measures

~~**MM TR-1: Advance Notification of Roadway Closures.** SDG&E shall provide notification of lane closures to drivers and nearby residents at least 48 hours in advance. Notification shall be made in the form of roadside signage for drivers and flyers mailed to affected residents.~~

MM TR-2: Helicopter Safety Plan and External-Load Training Program. Prior to start of construction, SDG&E will submit a Helicopter Safety Plan and External-Load Training Program prepared by qualified personnel to the California Public Utilities Commission (CPUC). All workers that shall be present when helicopters are in use for construction of the project shall be trained regarding helicopter external loads. A sign-in sheet recording the names and dates of all individuals trained shall be maintained by SDG&E. Helicopter Safety Plan and Worker Environmental Awareness training shall include the following, at minimum:

- An overview of the general steps taken by the certified Rotorcraft External-Load Operators before starting operations, including a survey of the flight area; the typical ground worker instructions from certified Rotorcraft External-Load Operators; the ramp inspection checklist (14 CFR 133 Ramp Inspection Job Aid) and examples of typical causes of unsatisfactory ramp inspections; and the equipment typically required for Class A, B, C, and D loads as specified in 14 CFR 133;
- A summary of the contents of the FAA-approved Rotorcraft Load Combination Flight Manuals applicable to external-load operations planned for the project including maximum loads (internal and external) and load types and general performance capabilities, under approved operating procedures and limitations, for each type of helicopter to be used;
- Detailed instruction regarding the proper methods of loading, rigging, or attaching external loads and examples of improper rigging and resultant accidents and incidents; and
- Detailed information about planned helicopter construction techniques.

A safety brief, plan of operations, and refresher helicopter external-load operations training shall be presented at the start of all days during which helicopter external-load operations are planned to occur. The planned flight paths, landing areas, and timing and types of helicopter construction activities for the day shall be presented as well. At minimum, the refresher training shall include examples load types and maximum loads (internal and external) for each type of helicopter to be used that day and a demonstration of proper external-load attaching and restraining means for all types of attaching and retraining devices that may be used.

No SDG&E personnel or contractor, including helicopter pilots and crewmembers, shall work in proximity to or be involved with helicopter external-load operations unless they receive the initial training and attend the daily safety brief and refresher training. Signatures of all personnel and contractors who attend the daily safety brief and refresher training shall be collected, and they shall display a clear indication (e.g., sticker on the hardhat color-coded by training day) that they are approved to work in proximity to or otherwise be involved with helicopter external-load operations for the day.

MM TR-3: Notification and Monitoring of Helicopter Use. SDG&E will notify the Long Beach Flight Standards District Office at least one week in advance of all days during which helicopter operations are planned to occur or as required by the Flight Standards District Office. In addition, SDG&E will notify all residents, businesses, and owners of property within 0.25 miles of planned ~~or emergency~~ helicopter flight paths and landing areas along the Project alignment at least one week in advance of all days during which helicopter operations are planned to occur.

In compliance with 14 CFR Part 133, the loading and unloading of all helicopter external loads shall be monitored by lineman (non-apprentice) certified by ~~Southern California Edison~~SDG&E to rig and inspect helicopter external loads.

All accidents or incidents reported to the NTSB or FAA shall, at the same time of reporting, be reported to the CPUC. Near misses involving helicopters that had the potential to result in an accident or incident as defined by the NTSB but do not require NTSB notification, shall be ~~entered and described on a dated~~ recorded by ~~Southern California Edison~~SDG&E and immediately reported to the applicant's safety coordinator and the CPUC.

MM TR-4: City of San Juan Capistrano and City San Clemente Traffic Engineer and Parks and Recreation Review. ~~At least 30 days p~~Prior to commencing work within city boundaries of San Juan Capistrano and San Clemente, the applicant shall submit a draft Traffic Control Plan (APM TR-7) for the project to City of San Juan Capistrano and City of San Clemente traffic engineers and Parks and Recreation departments for their review. A Draft Traffic Control Plan shall be submitted according to the timeframe established by the authority having jurisdiction of the roadway or trail being impacted. The applicant shall incorporate any recommendations from this review related to bikeway, sidewalk, and unpaved trail facilities into a final Traffic Control Plan prior to commencing work. The applicant shall provide a copy of the final Traffic control plan to the City of San Juan Capistrano, the City of San Clemente and the CPUC prior to commencing work.

MM TR-5: Content Requirements of the Traffic Control Plan. The applicant shall include and implement the following restrictions within their Traffic Control Plan (APM TR-7):

- Lane closures along Vista Montana shall only be implemented on days when San Juan Hills High School is not in session.
- Construction-generated traffic associated with the project shall avoid the start and ending time for San Juan Hills High School. Workers shall avoid traveling along Vista Montana during the periods of 6:30 to 8:00 AM and 2:00 to 3:30 PM on days that San Juan Hills High School is in session. These times shall be modified as necessary over the duration of the project in response to changing school arrival/dismissal times.

Additionally, a final traffic control plan shall be provided to the CPUC for approval prior to the start of construction.

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