CHAPTER 5.0 – ENVIRONMENTAL IMPACTS AND MITIGATION

1.1 Introduction

This section describes potential environmental impacts associated with construction and operation of the proposed Viejo Substation and 220 kV transmission line and 66 kV subtransmission line improvements. Each resource element is compared with CEQA impact thresholds to determine whether a significant impact would occur. Construction and operation impacts are addressed separately.

1.2 Aesthetics/Light and Glare

Potential aesthetic impacts could occur if:

- The project was to adversely impact scenic vistas or damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- The project was to substantially degrade the existing visual character or quality of the site and its surroundings.
- The project was to create a new source of substantial light or glare adversely impacting day or nighttime views in the area.

1.2.1 Proposed Substation Site

Construction:
Construction of the proposed substation would not adversely impact scenic vistas or scenic resources or substantially degrade the existing visual character or quality of the site and its surroundings. The site is currently graded, vacant and located within a light industrial area. During construction, trucks, cranes and other equipment would be visible from neighboring properties to the north and from the SR 241 Foothill Transportation Corridor. Additionally, substation components and LST and TSP structures would also be visible as they are delivered and assembled on site. Because of site and adjacent topography, views from residential properties located northeast of the proposed site would not significantly change.

Project construction would typically occur during daylight hours and would not create new sources of light or glare. Some work during nighttime hours may be necessary during cut over of the subtransmission lines or to compensate for schedule delays. Equipment would be visible on site from neighboring properties; however, this would be short-term and not have a significant impact on aesthetic resources.

Operation:
During operation, the Viejo Substation would not adversely impact scenic vistas or scenic resources. The proposed site is currently graded, flat and located within a light industrial area. Figure 5-1a, Simulated View of Proposed Viejo Substation with Screening Wall (looking north over SR 241) and Figure 5-1b, Simulated View of Viejo Substation with Proposed Block Wall and Landscaping, provide visual simulations of the completed Viejo Substation from the south

looking north. The Viejo Substation would not significantly change views from neighboring properties.

Insert Figure 5-1a. Simulated View of Proposed Viejo Substation with Screening Wall (looking north over SR 241)

Figure 1-1a Simulated View of Proposed Viejo Substation with Screening Wall (looking north over SR 241)

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Insert Figure 5-1b Simulated View of Viejo Substation with Proposed Block Wall and Landscaping

Figure 1-1b Simulated View of Viejo Substation with Proposed Block Wall and Landscaping

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Proposed LST and TSP structures and conductors would be visible; however, the Viejo Substation itself would be partially screened by a wall and perimeter fencing. To minimize visual impacts, landscaping would be installed around the perimeter of the facility. Landscaping would be consistent with *Industrial Site Development Standards* of Foothill Ranch Planned Community Development Plan and Supplemental Text. Views to the proposed site from light industrial properties to the north would be similar to those shown in Figures 5-1a and 5-1b. Views from residential properties northeast of the site would be partially blocked by adjacent topography. It is likely however, that the top portion of the new structures would be visible. The view shed is not considered significant nor does the proposed site contain scenic visual resources.

The proposed Viejo Substation would have both security and operational lighting. The security lights would be low intensity lights compatible with the landscape and architectural aspects of the substation. The security lights would be photo sensor controlled. The photo sensors would generally be in operation from dusk until dawn.

Operational lighting would consist of high-pressure sodium lights in the switchracks, around the transformer banks, and in areas of the yard where activity may have to take place during night time hours. Lights would normally be off and controlled by a manual switch. No significant sources of permanent light and glare would be created.

The proposed Viejo Substation would not adversely impact scenic views or scenic resources nor would new sources of permanent illumination be created. Thus, the proposed Viejo Substation is not anticipated to have a significant impact on aesthetic resources.

1.2.2 Alternative 1A - Proposed Subtransmission Line

Construction:
Figures 5-2a through 5-2e show existing and simulated views from locations along the 220 kV corridor. For reference purposes, maps showing photograph locations, location titles and direction of view are provided with each figure. As shown, facilities within the 220 kV corridor would be visible from the south along the SR 241 Foothill Transportation Corridor and adjacent to the 220 kV corridor. Replacement of the 66 kV subtransmission TSPs within the 220 kV corridor would change views from neighboring properties; however, the general visual character of the 220 kV corridor would remain unchanged since 220 kV transmission LSTs and 66 kV TSPs already exist within the 220 kV corridor. Thus, construction of the proposed 66 kV subtransmission line improvements would be an incremental impact and would not substantially adversely impact scenic vistas, damage scenic resources or degrade the existing visual character or quality of the 220 kV corridor and its surroundings. SCE designed Alternative 1A to minimize visual impacts of the subtransmission facilities by reducing the number of spans and H-Frame structures. Further the H-Frame structures would be located adjacent to the existing 220 kV LSTs to harmonize span length. Construction of the subtransmission facilities would normally occur during daylight hours. No additional sources of light or glare would be created.

Insert Figure 5-2a Visual Simulation from Painted Trails

Figure 1-2a Visual Simulation from Painted Trails

"Blue hills.jpg"

Insert Figure 5-2b Visual Simulation from Palmia

Figure 1-2b Visual Simulation from Palmia

"Blue hills.jpg"

Insert Figure 5-2c Visual Simulation from Pine Crest Park

Figure 1-2c Visual Simulation from Pine Crest Park

"Blue hills.jpg"

Insert Figure 5-2d Visual Simulation from Canyon Crest (looking North)

Figure 1-2d Visual Simulation from Canyon Crest (looking North)

"Blue hills.jpg"

Insert Figure 5-2e Visual Simulation from Canyon Crest (looking South)

Figure 1-2e Visual Simulation from Canyon Crest (looking South)

"Blue hills.jpg"

Operation:
The proposed subtransmission line would not adversely impact scenic vistas or damage scenic resources. SCE designed Alternative 1A to minimize visual impacts of the subtransmission facilities by reducing the number of spans and H-Frame structures. Further the H-Frame structures would be located adjacent to the existing 220 kV LSTs to harmonize span length. No lighting would be installed within the 220 kV corridor; thus, no new sources of light or glare would be created. No operational impact would occur.

1.2.3 Alternative 1B - Subtransmission Line

Construction:
Aesthetic impacts associated with the Alternative 1B overhead segment between the Viejo Substation and Santa Margarita Parkway would be the same as described for the proposed Alternative 1A subtransmission line improvements (see Figure 5-2a – Visual Simulation from Painted Trails). The southern segment between Santa Margarita Parkway and the Chiquita Substation would be installed underground within existing roads. During construction, equipment and related activity would be visible from neighboring properties and passing motorists. This impact would be temporary and have no significant aesthetic impact.

Operation:
After construction, the underground portion of this alternative would have no impact on aesthetic resources. Once in operation, the proposed overhead portion of the subtransmission line would remain within the existing 220 kV corridor; and thus, would not adversely impact scenic vistas or damage scenic resources. No lighting would be installed within the 220 kV corridor; thus, no new sources of light or glare would be created. No significant aesthetic impacts would occur.

1.2.4 Alternative 1C - Subtransmission Line

Construction:
With the exception of the overhead structures adjacent to the substation, the subtransmission line would be installed underground. Aesthetic impacts would be the same as described above for the underground segment of Alternative 1B.

Operation:
After construction, the subtransmission line would be underground and have no impact on aesthetic resources.

1.2.5 Mitigation

Measures to avoid and/or minimize impacts to aesthetic resources have been included as part of the project design or would be implemented per regulation and SCE standard construction and operation protocols. As a result, no impacts to aesthetic resources are anticipated and therefore no mitigation measures are deemed necessary.

1.3 Agriculture Resources

Potential impacts to agricultural resources could occur if the project would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use.

No agricultural resources occur within or in the vicinity to the Viejo System Project. Thus the project would have no impact on agricultural resources.

1.3.1 Mitigation

There are no impacts to agricultural resources and therefore no mitigation is deemed necessary.

1.4 Air Quality

Potential air quality impacts could occur if:

- The project conflicts with or obstructs implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan.
- The project violates any stationary source air quality standard or contributes to an existing or projected air quality violation.
- The project results in a net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative threshold for ozone precursors).
- The project creates or contributes to a non-stationary source “hot spot” (primarily carbon monoxide).
- The project exposes sensitive receptors to substantial pollutant concentrations.
- The project creates objectionable odors impacting a substantial number of people.

1.4.1 Proposed Viejo Substation

Construction:
Construction of the proposed Viejo Substation would generate emissions from the operation of heavy equipment and support vehicles. In addition, some dust could be generated during clearing, grading or scraping activities associated with site preparation. Up to 5,500 cubic yards of material would be removed from the site. Disturbed soil would be subject to wind entrainment; thus, dust control measures would be implemented to minimize off-site deposition of fugitive dust.

Table 5-1 shows the emission impact thresholds identified by SCAQMD for development projects. Those anticipated to generate emissions in excess of the values shown in Table 5-1 are considered projects that could have a potentially adverse impact on air quality.

Table 1-1 Emission Thresholds of Significance

Pollutant	Construction		Operations
	Pounds/day	Tons/quarter	Pounds/ day
CO	550	24.75	550
Sulfur Oxides (SO_x)	150	6.75	150
NO_x	100	2.5	55
PM_{10}	150	6.75	150
ROC	75	2.5	55

Source: SCAQMD, CEQA Air Quality Handbook, 1993

1.4.1.1 Fugitive Dust Emissions

Fugitive dust (i.e., uncontrolled, wind blown particulates) would be generated during construction activities particularly during vegetation removal and grading. Dust emissions can vary substantially depending on levels of activity, specific operations, and prevailing meteorological conditions. Construction operations are assumed to impact the 12.5 acre proposed Viejo Substation site and a total of two-acres of cleared area within the 220 kV corridor for the construction pads and lay-down areas. Daily emissions are based on the disturbance/exposure of 80 percent (i.e., 11.6 acres) of the total 14.5 acres each day. Average dust emissions from construction activities were estimated based on an emission rate of 0.11 ton/acre-month (SCAQMD, 1993). This emission factor is based on uncontrolled general construction operation.

Based on these assumptions, construction of the proposed Viejo Substation and the minor modifications to the 220 kV transmission lines would generate approximately 2,552 pounds of fugitive dust emissions per month (assuming 20 workdays within a month, approximately 128 pounds each day). While no impacts are anticipated, SCE will follow the Best Available Control Measures (BACM) as defined in the SCAQMD *Rule 403 Implementation Handbook* to further reduce fugitive dust emissions.

As shown, PM10 emissions are not anticipated to exceed the threshold of 150 lbs/day as referenced in Table 5-1.

1.4.1.2 Combustion Emissions

Combustion emissions associated with construction-related vehicles and equipment are estimated based on the equipment mix shown in Table 5-2 – Estimated Exhaust Emissions, which is consistent with data shown in Table 3-3 – Construction Personnel and Equipment Summary. These emissions would vary according to the activity. The list provided includes construction equipment needed for the entire project. In addition to the heavy equipment operating on site, it was assumed that one diesel-fueled water truck would also be used on site for dust control. CO emissions for all pollutants are projected to be below the significance threshold identified in Table 5-1. No significant impact to air quality is anticipated to occur during construction of the proposed project.

Table 1-2 Estimated Daily Exhaust Emissions for Viejo Substation and Adjacent 220 kV Modifications

	Maximum Daily Emissions (lbs/day)				
Equipment	**CO**	**ROC**	**NOx**	**SOx***	**PM10**
Grader (1)	.064	.024	.168	.016	.016
Pavers(1)	.056	.008	.184	.016	.016
Dump Trucks(2)	.096	.032	.336	.032	.048
Driller (1)	.160	.024	.192	.016	.024
Backhoe (2)	.120	.024	.176	.016	.016
Rollers/Compactor	.056	.016	.160	.016	.016
Diesel Trucks (30)	1.440	.480	5.040	.480	.480
Crane (1)	.072	.024	.184	.016	0.240
Trencher (1)	.160	.024	.176	.016	.024
Aerial Lifts (2)	.104	.024	.248	.032	.024
Fork Lift (1)	.176	.024	.144	.016	.024
Crew Trucks (8)	18.560	1.120	3.360	No emissions	.080
TOTAL	**21.152**	**1.840**	**10.510**	**.690**	**.810**
Threshold	550	75	100	150	150
Below Threshold?	YES	YES	YES	YES	YES

CO = Carbon Monoxide ROG = Reactive Organic Gas NOx = Nitrogen Dioxide SOx = Sulfur Dioxide PM10 = Particulate Matter EF = Emission Factor E = Emissions
Construction equipment emission factors derived from Table A9-8-C of the CEQA Air Quality Handbook, SCAQMD, revised November 1993.
Construction equipment estimated for diesel fuel emissions.
Construction emission estimates assumes equipment operation at 100 percent load for an entire 8-hour construction day.
Total construction equipment emissions are considered unmitigated.
* = Sulfur oxide

Operation:
Normal operation of the proposed Viejo Substation would produce no air emissions.

Two to three vehicle trips per month would be generated for maintenance purposes. These trip related emissions would not exceed emission impact thresholds identified by SCAQMD and therefore would not be considered significant.

1.4.2 Alternative 1A - Proposed Subtransmission Line

Construction:
Fugitive dust emissions are estimated assuming one acre of disturbance each day. A total of 11 pounds of fugitive dust would be generated each day. This is below the 150-pound per day threshold identified above. SCAQMD dust control measures would be used to further reduce dust from cleared areas and haul roads.

Table 5-3, Construction Emissions from Subtransmission Improvements, shows anticipated emissions associated with construction of proposed improvements within the 220 kV corridor.

It is not anticipated that emission impact thresholds will be exceeded during construction of the proposed subtransmission line improvements.

Table 1-3 Estimated Daily Exhaust Emissions for Overhead Subtransmission Line Construction

	Maximum Daily Emissions (lbs/day)				
Equipment	**CO**	**ROC**	**NOx**	**SOx***	**PM10**
Grader (1)	.0640	.024	.168	.016	.016
Support Vehicle (8)	18.560	1.120	3.360	0.000	.080
Bore/Drill Rig (1)	.160	.024	.192	.016	.024
Dump Truck (2)	.048	.016	.168	.016	.024
Backhoe (2)	.120	.024	.176	.016	.016
Forklift (1)	.176	.024	.144	.016	.024
Aerial Lifts (2)	.104	.024	.248	.032	.024
Diesel Trucks (10)	.480	.160	1.680	.160	.160
Crane (1)	.072	.024	.184	.016	0.024
Trencher	.160	.024	.176	.016	.024
TOTAL	**20.0480**	**1.490**	**6.850**	**.340**	**.460**
Threshold	550	75	100	150	150
Below Threshold?	YES	YES	YES	YES	YES

Operation:
Once in operation, the proposed subtransmission lines would not generate emissions; and thus, would have no impact on air quality. Two to three vehicle trips per month would be generated for maintenance purposes. These trip-related emissions would not exceed emission impact thresholds identified by SCAQMD and therefore would not be considered significant.

1.4.3 Alternative 1B - Subtransmission Line

Construction:
Construction of the overhead segment of Alternative 1B would be the same as described for Alternative 1A. Thus, construction of the overhead segment of this alternative would generate emission levels equal to those shown in Table 5-3. Appropriate fugitive dust control measures would be implemented to reduce emissions associated with ground disturbing activities such as watering dirt roads, limiting traffic speeds on unpaved roads to 15 mph and sweeping streets if visible soil material is deposited onto adjacent public streets.

South of Santa Margarita Parkway, Alternative 1B would be constructed within urban roadways and thus, would not generate fugitive dust volumes typically associated with bare ground disturbance. Estimated equipment emissions are shown in Table 5-4 – Estimated Construction Emissions for Alternative 1B.

As shown, it is not anticipated that emission impact thresholds will be exceeded. Overall daily emissions would be slightly higher than those associated with the proposed Alternative 1A subtransmission line improvements. However, no air quality impacts associated with this Alternative 1B are anticipated.

Operation:
Once in operation, the Alternative 1B subtransmission lines would not generate emissions; and thus, would have no impact on air quality. Two to three vehicle trips per month would be generated for maintenance purposes. These trip-elated emissions would not exceed emission impact thresholds identified by SCAQMD and therefore would not be considered significant.

1.4.4 Alternative 1C - Subtransmission Line

Construction:
Alternative 1C would be constructed underground within urban roadways and thus would not generate fugitive dust volumes typically associated with bare ground disturbance. Estimated equipment emissions are identified in Table 5-4.

Table 1-4 Estimated Daily Exhaust Emissions for Underground Subtransmission Line Construction

	Maximum Daily Emissions (lbs/day)				
Equipment	**CO**	**ROC**	**NOx**	**SOx***	**PM10**
Asphalt Paver (1)	.056	.008	.184	.016	.016
Support Vehicle (8)	18.560	1.120	3.360		.080
Bore/Drill Rig (1)	.160	.024	.192	.016	.024
Dump Truck (2)	.192	.032	.336	.032	.048
Backhoe (2)	.480	.048	.352	.032	.032
Rollers (1)	.056	.160	.160	.160	.160
Trucks (10)	1.20	.080	.840	.080	.080
Crane (1)	.072	.024	.184	.016	0.024
Trencher	.160	.024	.176	.016	.024
TOTAL	**19.936**	**1.460**	**6.590**	**.300**	**.430**
Threshold	550	75	100	150	150
Below Threshold?	YES	YES	YES	YES	YES

Operation: Once in operation, no emissions would be generated under Alternative 1C. Therefore there would be no impact on air quality.

1.4.5 Mitigation

Measures to avoid and/or minimize impacts to air quality have been included as part of the project design or would be incorporated per regulation and SCE standard construction and operation protocols. As a result, no impacts to air quality are anticipated and no mitigation measures are offered.

1.5 Biological Resources

Under CEQA Significance Criteria (Appendix G of the revised CEQA Guidelines) a project would be considered to have a potentially significant biological impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service,
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service,
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means,

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites,
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

In general, the primary criteria for determining significance of an impact on biological resources are sensitivity ratings and regulatory protection assigned by federal and state resource agencies (e.g., USFWS, CDFG) and as defined in the Central and Coastal NCCP. Any activity within the proposed project area that results in the "take" of a federally or state-listed threatened or endangered species would be considered significant. To "take" is defined in the federal Endangered Species Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect an endangered or threatened species or to attempt to engage in any of these activities." Harm not only includes killing a species, but activities that modify or significantly degrade habitat that could result in death or injury to individual members of a species by significantly disrupting their essential behavioral patterns. The number of individuals impacted is not relevant to determining significance; if one individual is, or could be impacted, then the impact would be considered significant.

Impacts to biological resources resulting from the construction of the proposed project and each alternative can be characterized as four types and are described below:

- Direct impacts occur when biological resources are altered, disturbed, destroyed, or removed during the course of project implementation. Examples of direct impacts are loss of habitat as a result of grading, filling or "take" of a sensitive species.
- Indirect impacts occur when project-related activities impact biological resources in a manner other than direct. Potential indirect impacts include increased noise levels and nonnative weed establishment.
- Permanent impacts result in the irreversible loss of biological resources. Examples include the removal of sensitive vegetation or vegetation that supports a sensitive species, or chronic disturbance of sensitive species during a critical time period (e.g., breeding season).
- Temporary impacts are reversible with the implementation of mitigation measures. Examples include the revegetation of an area cleared during construction, or short-term noise events associated with operations.

All impacts to biological resources would occur in the Central and Coastal NCCP outside of the Reserve Areas or in the proposed Southern NCCP.

1.5.1 Proposed Substation Site

For Alternatives 1A, 1B, and 1C, SCE is proposing the same substation site facilities. These site facilities include: the substation, 220 kV modifications, 66 kV TSPs, associated framing and laydown areas and all associated access/stub roads. All impacts and mitigation associated with the substation site facilities would be the same for each of the three 66 kV line route

alternatives. For this reason, only this section 5.5.1 will include the substation site facilities discussion with the understanding that it is the same for Alternatives 1A, 1B, and 1C.

1.5.1.1 Vegetation and Habitat

Approximately 12.5 acres of disturbed habitat would be directly and permanently impacted by the construction of the proposed substation. Impacts to disturbed habitat would not be considered significant.

- TSPs for the 66 kV Subtransmission and 220 kV Transmission Lines

Approximately 0.01 acres of California sage brush-California buckwheat, 0.007 acres of southern cactus scrub, 0.016 acres of landscaped, and 0.022 acres of disturbed habitat would be directly and permanently impacted by the construction and erection of the proposed TSPs for the 66 kV subtransmission line. Approximately 0.02 acres of California Sage brush-California buckwheat, 0.01 acres of southern cactus scrub, and 0.0305 acres of disturbed habitat would be directly and permanently impacted from the construction and erection of the proposed TSPs for the 220 kV transmission line modifications. The permanent impact areas would include the manufactured footing area and 10' diameter buffer around the base of each TSP for fire suppression (see Figure 5-3a – Proposed Impacts to Biological Resources). These impacts would occur in the Central and Coastal NCCP.

Approximately 0.33 acres of California sage brush-California buckwheat, 0.13 acres of southern cactus scrub, and 0.14 acres of disturbed habitat would be temporarily impacted during construction of the 220 kV TSPs. These impacts would occur during construction of a staging area to erect the TSPs within the Central and Coastal NCCP (Figure 5-3a – Impacts to Biological Resources).

The permanent impacts to coastal sage scrub (California sage brush-California buckwheat and southern cactus scrub) associated with the TSPs for the 66 kV and 220 kV transmission lines would be considered significant unless mitigated. All temporary impacts would not be considered significant because these areas would be revegetated with an appropriate native seed mix.

All of the impacts to Covered Habitats and Identified Species associated with the construction of the 66 kV subtransmission TSPs and 220 kV transmission line components are fully mitigated pursuant to the Central and Coastal NCCP as discussed in detail in Section 5.5.5 Mitigation.

- *LSTs for the 220 kV Transmission Line*

Approximately 0.04 acres of southern cactus scrub, 0.22 acres of disturbed habitat, and 0.07 acres of landscaped habitat would be temporarily impacted during the removal of existing LSTs M22-T4, M23-T1, and M23-T2. These impacts would occur for the area at the base of the LSTs and 10 foot radius around the LSTs. This impact would also include the grading of one 50' X 50' dirt crane pad at each of the LST locations for a total of three temporary dirt crane pads (see Figure 5-3a – Impacts to Biological Resources). These impacts would occur in the Central and Coastal NCCP.

Approximately 0.17 acres of southern cactus scrub and 0.37 acres of disturbed habitat would be permanently and directly impacted during the replacement of LSTs M22-T4, M23-T1, and M23-T2. The permanent impact areas for the replacement of the three LSTs also include a 25-foot buffer from the base of each LST for fire suppression (see Figure 5-3a - Impacts to Biological Resources).

Approximately 0.32 acres of southern cactus scrub, 0.08 acres of disturbed habitat, and 0.08 acres of landscaped would be directly impacted from grading crane pads and assembly areas at the three LSTs for the 220 kV transmission line. All of these impacts would be temporary and would include the construction of two 50' X 50' manufactured pads at LSTs M23-T1 and M23-T2 and one 50' X 50' manufactured pad at LST M22-T4 (see Figure 5-3a– Impacts to Biological Resources).

Insert Figure 5-3a Impacts to Biological Resources

Figure 1-3a Impacts to Biological Resources

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Permanent impacts to coastal sage scrub (southern cactus scrub) associated with the LSTs for the 220 kV transmission line would be considered significant unless mitigated. All temporary impacts would not be considered significant because these areas would be revegetated with an appropriate native seed mix. All of the impacts to Covered Habitats and Identified Species associated with construction of the 220 kV transmission line components are within the Central and Coastal NCCP (outside of the NCCP Reserve System), and therefore are fully mitigated pursuant to the Central and Coastal NCCP as discussed in detail in Section 5.5.5 Mitigation.

- Access and Stub Roads for the 66 kV Subtransmission and 220 kV Transmission Lines

Approximately 0.15 acres of southern cactus scrub (0.13 for the 220 kV transmission line access road and 0.02 for the 66 kV stub road) and 0.01 acres of disturbed habitat (66 kV stub road) would be directly impacted from construction of the 16' X 200' access road necessary to access LST M22-T4 for the 220 kV transmission line and a stub road necessary to access a TSP construction area for the 66 kV subtransmission line (see Figure 5-3a– Impacts to Biological Resources). These impacts would occur in the Central and Coastal NCCP.

Permanent impacts to coastal sage scrub (southern cactus scrub) associated with the access and stub roads for the 66 kV subtransmission line TSPs and 220 kV transmission line LSTs and TSPs would be considered significant unless mitigated.

All of the impacts to vegetation and habitat associated with the substation site facilities are presented in Table 5-5.

Table 1-5 Vegetation Associations Acreage Impacts for Substation Site and Facilities in the Central and Coastal NCCP

Vegetation Associations	Sub-station	66 kV TSPs	66 kV Stub Roads	220 kV TSPs		220 kV LSTs		220 kV Stub Roads	Total	
	Perm.	Perm.	Perm.	Perm.	Temp.	Perm.	Temp.	Perm.	Perm.	Temp.
Native										
California Sagebrush-California Buckwheat Scrub	0	.010	0	.020	.330	0	0	0	.030	.330
Southern Cactus Scrub	0	.007	.020	.010	.130	.170	.360	.130	.337	.490
Total	0	.017	.020	.030	.460	.170	.360	.130	.367	.820
Non-native										
Disturbed	12.500	.022	.010	.030	.140	.370	.300	0	12.932	.440
Landscaped	0	.016	0	0	0	0	.150	0	.160	.150
Total	12.500	.038	.010	.030	.140	.370	.450	0	13.092	.590

1.5.1.2 Sensitive Plant Species

No perennial or annual sensitive plant species were located during the surveys. However, since surveys were conducted during a drought year and in the late summer, sensitive annual and bulb species would not have been detected. Therefore impacts to sensitive annual and bulb plant species cannot be fully analyzed in this report. The only conditionally covered sensitive plant species that may occur in the area is a late-blooming annual, the foothill mariposa lily (Skinner and Pavlik). However, due to drought conditions in 2002, this species may not have been detectable. Additional surveys for this species will be conducted in 2003. The CPUC will be notified of the results of these surveys no later than June 9, 2003. Many-stemmed dudleya was not detected during surveys and has a low potential to occur on site because the site lacks suitable habitat. However, if the species is found on site during SCE's surveys to be conducted in Spring 2003, measures will be implemented to avoid or reduce impacts to this species.

1.5.1.3 Wildlife

Permanent impacts such as injury, mortality and permanent displacement of wildlife during construction of the 66 kV and 220 kV TSPs, 220 kV LST footings, stub roads, crane pads, and staging areas could occur. Temporary impacts such as temporary displacement of wildlife could also occur during construction. However, these impacts would not be significant because of the

large, stable population size and availability of habitat adjacent to the work area into which wildlife can disperse.

It is anticipated that no native trees would be removed for construction of the project. If trees must be removed, they would be removed outside of the nesting season, or if this was not possible a nest search would be conducted prior to tree removal. If active nests were located SCE would consult with CDFG and USFWS on the movement of the nests.

Noise associated with construction could be a temporary and an indirect impact to general avian species. However, this impact is not expected to be significant.

1.5.1.4 Sensitive Wildlife

No permanent impacts to sensitive wildlife species detected in the study area, including coastal California gnatcatcher and coastal cactus wren, are anticipated to occur with construction of the proposed project, other than the direct loss of suitable habitat for these species addressed above.

California horned lark was observed on the substation site. This species is primarily a wintering bird in coastal southern California. It is unlikely that this species would remain to nest at the substation site due to the lack of suitable nesting habitat. The removal of 12.5 acres of wintering habitat for this species would not be considered a substantial adverse effect under CEQA.

Noise could be a temporary impact to nesting coastal California gnatcatchers that were observed in the landscaped slope located adjacent to the proposed substation site. However, construction will occur consistent with the construction-related minimization measures in the NCCP (NCCP EIR, Section 7.5.3) described in detail in Section 5.5.5. This will reduce impacts to a level of less than significant.

1.5.1.5 Indirect Impacts

The indirect impacts associated with the construction of the proposed substation and associated facilities could include an increase in nonnative weed establishment and recruitment at the substation site associated with soil disturbance. However, this indirect impact would not be considered significant.

1.5.2 Alternative 1A – Proposed Subtransmission Line

1.5.2.1 Vegetation and Habitat

- *66 kV Transmission Line H-Frames*

Approximately 0.005 acres of California sage brush-California buckwheat, 0.02 acres of southern cactus scrub, and 0.04 acres of disturbed habitat would be directly and permanently impacted from the construction and erection of the proposed H-frames for the 66 kV subtransmission lines in the Central and Coastal NCCP. Approximately 0.02 acres of revegetated coastal sage scrub, located south of Los Alisos Road, dominated by nonnative

species and 0.02 acres of disturbed riparian, dominated by nonnative species would be directly and permanently impacted by the construction and erection of the proposed H-frames for the 66 kV subtransmission lines in the Proposed Southern NCCP. An additional 0.01 acres of annual grassland, 0.11 acres of disturbed habitat, 0.04 acres of landscaped, and 0.02 acres of developed would also be directly and permanently impacted from the construction and erection of the proposed H-frames for the 66 kV subtransmission lines in the Proposed Southern NCCP. Another permanent impact area is the 10-foot buffer around each H-frame for permanent fire suppression activities (see Figures 5-3a through 5-3c – Impacts to Biological Resources

One existing pole located along the 66 kV subtransmission line in the Central and Coastal NCCP would be removed. Approximately 0.28 acres of predisturbed area would be temporarily impacted during pole removal.

Impacts to a disturbed riparian habitat may require a Streambed Alteration Agreement from CDFG under Section 1600 of the California Fish and Game Code. All direct impacts resulting from the installation of an H-frame structure within this area would be to non-native vegetation and therefore insignificant.

Permanent impacts to coastal sage scrub (California sage brush-California buckwheat and southern cactus scrub) would be considered significant unless mitigated. However, all of the impacts to Covered Habitats and Identified Species associated with the construction of the 66 kV subtransmission line components are outside of the NCCP Reserve System and therefore are fully mitigated pursuant to the Central and Coastal NCCP as discussed in detail in Section 5.5.5 Mitigation. There are no impacts to sensitive native vegetation in the proposed Southern NCCP.

All of the impacts to vegetation and habitat associated with this Alternative 1A are presented in Table 5-6.

Insert Figure 5-3b Impacts to Biological Resources

Figure 1-3b Impacts to Biological Resources

"Blue hills.jpg"

Insert Figure 5-3c Impacts to Biological Resources

Figure 1-3c Impacts to Biological Resources

"Blue hills.jpg"

Table 1-6 Vegetation Associations Acreage Impacts for Alternative 1A in the Central and Coastal NCCP and Proposed Southern NCCP

Vegetation Associations	Impacted Acres Central and Coastal NCCP			
	66 kV		Total	
	Permanent	Temporary	Permanent	Temporary
Native				
California Sagebrush – California Buckwheat Scrub	0.005	0	0.005	0
Southern Cactus Scrub	.020	0	.020	0
Total	.025	0	.025	0
Non-native				
Disturbed	.040	.280	.040	.280
	Impacted Acres Proposed Southern NCCP			
	66 kV		**Total**	
	Permanent	**Temporary**	**Permanent**	**Temporary**
Non-native				
Revegetated Coastal Sage Scrub[1]	0.020	0	0.020	0
Disturbed Riparian[1]	0.020	0	0.020	0
Annual Grassland	0.010	0	0.010	0
Disturbed	0.110	0	0.110	0
Landscaped	0.040	0	0.040	0
Developed	0.020	0	0.020	0
Total	0.220	0	0.220	0

1 Dominated by non-native species

1.5.2.2 Sensitive Plant Species

No perennial or annual sensitive plant species were located during the surveys within the 220 kV corridor. However, since surveys were conducted during a drought year and in the late summer, sensitive annual and bulb species would not have been detected. Therefore impacts to sensitive annual and bulb plant species cannot be fully analyzed in this report. The only conditionally covered sensitive plant species that may occur in the area is a late-blooming annual, the foothill mariposa lily (Skinner and Pavlik). However, due to drought conditions in 2002 this species may not have been detectable. Additional surveys for this species will be conducted in 2003. The CPUC will be notified of the results of these surveys no later than June 9, 2003. Many-stemmed dudleya was not detected during surveys and has a low potential to occur within the 220 kV corridor because the corridor lacks suitable habitat. However, if the species is found within the corridor during SCE's surveys to be conducted in Spring 2003, measures will be implemented to avoid or reduce impacts to this species.

1.5.2.3 Wildlife

Permanent impacts such as injury, mortality and permanent displacement of wildlife during removal of the 66 kV TSPs and the construction of the 66 kV H-frames, stub roads, crane pads, and staging areas could occur. Temporary impacts such as short-term displacement of wildlife could also occur during construction. However, these impacts would not be significant because of the large, stable population size and availability of habitat adjacent to the work area into which wildlife can disperse.

It is anticipated that no native trees would be removed for construction of the project. If trees must be removed, they would be removed outside of the nesting season, or if this was not possible a nest search would be conducted prior to tree removal. If active nests were located SCE would consult with CDFG and USFWS on the movement of the nests.

Noise associated with construction could be a temporary impact to general avian species. However, this impact is not expected to be significant.

1.5.2.4 Sensitive Wildlife

No permanent impacts to sensitive wildlife species detected in the study area, including coastal California gnatcatcher and coastal cactus wren, are anticipated to occur with construction of the proposed project, other than the direct loss of suitable habitat for these species addressed above.

Noise could be a temporary impact to nesting coastal California gnatcatchers that were observed in the landscaped slope located adjacent to the proposed substation site. However, construction will occur consistent with the construction-related minimization measures in the NCCP (NCCP EIR, Section 7.5.3) described in detail in Section 5.5.5. This will reduce impacts to a level of less than significant.

Least Bell's vireo, a Conditionally Covered Species was not detected during surveys, but minimal habitat for this species exists in Aliso Creek. The area where Alternative 1A would cross Aliso Creek is not considered habitat with long-term conservation value for least Bell's vireo based on the fact that no least Bell's vireo were observed in this area. No impacts to the vegetation in Aliso Creek would occur during construction. Under the NCCP, "habitat that supports migrant and nesting birds in locations with lesser long-term conservation values is covered, while habitat that supports migrant or nesting birds and has potentially significant long-term conservation value in the Central and Coastal sub-region is not covered". Therefore any indirect noise impacts in the vicinity of Aliso Creek would not be considered significant as this portion of Aliso Creek has habitat that has a low chance of supporting migrant and nesting birds and no least Bell's vireo were detected during protocol surveys. Furthermore, construction activities would occur approximately 800 feet from Aliso Creek. This distance reduces any potential impact on nesting, sensitive avian species within Aliso Creek.

1.5.2.5 Indirect Impacts

The indirect impacts associated with the construction of the 66 kV H-frame structures could include an increase in nonnative weed establishment and recruitment within the 220 kV corridor

associated with soil disturbance. However, this indirect impact would not be considered significant.

1.5.3 Alternative 1B – Subtransmission Line

1.5.3.1 Vegetation and Habitat

- 66 kV Subtransmission Line H-Frames (Overhead Segment)

Approximately 0.005 acres of California sage brush-California buckwheat, 0.02 acres of southern cactus scrub, and 0.04 acres of disturbed habitat would be directly and permanently impacted from the construction and erection of the proposed H-frames for the 66 kV subtransmission lines in the Central and Coastal NCCP. Approximately 0.02 acres of revegetated coastal sage scrub, located south of Los Alisos Boulevard, dominated by nonnative species and 0.02 acre of disturbed riparian, dominated by nonnative species would be directly and permanently impacted by the construction and erection of the proposed H-frames for the 66 kV subtransmission lines in the Proposed Southern NCCP. An additional 0.01 acre of annual non-native grassland, 0.01 acres of disturbed habitat, and 0.02 acres of landscaped, would also be directly and permanently impacted from the construction and erection of the proposed H-frames for the 66 kV subtransmission lines in the Proposed Southern NCCP. Another permanent impact area is the 10-foot buffer around each H-frame for permanent fire suppression activities (see Figures 5-3a through 5-3c – Impacts to Biological Resources).

One existing pole located along the 66 kV subtransmission line in the Central and Coastal NCCP would be removed. Approximately 0.28 acres of predisturbed area would be temporarily impacted during pole removal.

Permanent impacts to coastal sage scrub (California sage brush-California buckwheat and southern cactus scrub) would be considered significant unless mitigated.

All of the impacts to Covered Habitats and Identified Species associated with the construction of the 66 kV subtransmission line components are outside of the NCCP Reserve System and therefore are fully mitigated pursuant to the Central and Coastal NCCP as discussed in detail in Section 5.5.5 Mitigation.

- Impacts Associated with the Underground Portion of this Alternative

Approximately 6.0 acres of developed area would be impacted by the construction of the underground portion of this alternative. All impacts of the underground portion of this alternative are in developed areas and would not be considered significant.

All of the impacts to vegetation and habitat associated with this Alternative 1B are presented in Table 5-7.

Table 1-7 Vegetation Associations Acreage Impacts for Alternative 1B in the Central and Coastal NCCP and Proposed Southern NCCP

Vegetation Associations	Impacted Acres Central and Coastal NCCP			
	66 kV		Total	
	Permanent	Temporary	Permanent	Temporary
Native				
California Sagebrush – California Buckwheat Scrub	0.005	0	0.005	0
Southern Cactus Scrub	.020	0	.020	0
Total	.025	0	.025	0
Non-native				
Disturbed	.040	.280	.040	.280
	Impacted Acres Proposed Southern NCCP			
	66 kV		**Total**	
	Permanent	**Temporary**	**Permanent**	**Temporary**
Non-native				
Revegetated Coastal Sage Scrub[1]	0.020	0	0.020	0
Annual Grassland	0.010	0	0.010	0
Disturbed	0.010	0	0.010	0
Landscaped	0.020	0	0.020	0
Total	0.060	0	0.060	0

1 Dominated by non-native species

1.5.3.2 Sensitive Plant Species

Potential impacts to sensitive plant species resulting from the overhead construction of the H-frame structures in the Coastal and Central NCCP are the same as those discussed in Alternative 1A.

1.5.3.3 Wildlife

Potential impacts to wildlife resulting from the overhead construction of the H-frame structures in the Coastal and Central NCCP are the same as those discussed in Alternative 1A.

A minimal level of permanent impacts to burrowing wildlife species including injury, mortality and permanent displacement during construction of the underground portion of this alternative could occur. These impacts would not occur to sensitive species and therefore would not be considered significant under CEQA.

1.5.3.4 Sensitive Wildlife

Potential impacts to sensitive wildlife resulting from the overhead construction of the H-frame structures in the Coastal and Central NCCP are the same as those discussed in Alternative 1A.

No permanent or direct impacts to sensitive wildlife would be anticipated to occur during the construction of the underground segment of this alternative, as it would be constructed within city streets.

1.5.3.5 Indirect Impacts

The indirect impacts associated with the construction of the 66 kV H-frame structures could include an increase in nonnative weed establishment and recruitment associated with soil disturbance. However, this indirect impact would not be considered significant.

1.5.4 Alternative 1C - Subtransmission Line

1.5.4.1 Vegetation and Habitats

All permanent and direct impacts associated with this Alternative 1C would occur in developed and disturbed dirt areas. No native vegetation or habitats would be permanently or temporarily impacted by the construction of this Alternative 1C. Approximately 10.31 acres of developed areas and 0.47 acres of disturbed areas would be permanently impacted by the construction of this alternative. These impacts would not be considered significant.

1.5.4.2 Sensitive Plants

No sensitive perennial or annual plant species would be impacted during construction of Alternative 1C since it is completely underground and in developed and disturbed dirt areas.

1.5.4.3 Wildlife

A minimal level of permanent impacts to burrowing wildlife species such as injury, mortality and permanent displacement during construction of Alternative 1C could occur. Temporary impacts such as short-term displacement of wildlife could also occur during construction to wildlife species that live in the vicinity of developed areas and disturbed dirt areas. These impacts would not be considered significant.

1.5.4.4 Sensitive Wildlife

No permanent or direct impacts to sensitive wildlife would be anticipated to occur during the construction of this alternative, as it would be constructed underground in developed and disturbed dirt areas.

Noise associated with construction of this alternative near the Viejo Substation could be a temporary impact to sensitive avian species including the coastal California gnatcatcher and

coastal cactus wren. Construction would occur consistent with the construction-related minimization measures in the NCCP (NCCP EIR, Section 7.5.3). This mitigation measure would reduce impacts to a less than significant level.

1.5.4.5 Indirect Impacts

There are no known potential indirect impacts associated with the construction of this alternative.

1.5.5 Mitigation

Mitigation measures are actions developed in response to impacts identified in the analysis that could be taken to avoid or reduce the projected impacts. Several mitigation measures (NCCP Participating Landowner Mitigation, Minimization/Mitigation Measures-Construction Related Impacts, and Additional Mitigation Measures) are outlined below. Implementation of these mitigation measures would reduce the level of impacts to biological resources to less than significant levels.

Central and Coastal NCCP Participating Landowner Mitigation

The project proponent (SCE) is a signatory to the Implementation Agreement of the NCCP approved on July 10, 1996, for the Coastal and Central Sub-region of the NCCP. Potential direct and indirect impacts are fully mitigated through SCE's participation and contribution in the NCCP Mitigation Program. Mitigation measures outlined in the NCCP Mitigation Program include:

- creation of a habitat Reserve System that will include coastal sage scrub and representative habitat of virtually all of the major habitat types currently existing within the Central and Coastal Sub-region;
- creation and funding of an NCCP Non-Profit Corporation to coordinate management of the Reserve System;
- designation of Special Linkage Areas and Existing Use Areas to enhance biological connectivity within the Reserve System and Central and Coastal Sub-region; and,
- implementation of the Adaptive Management Program, including specific management plans, defined by the NCCP, within the Reserve System, including provisions for restoration and enhancement funded both by Participating landowners and non-Participating Land owners as provided herein.

SCE development activities and uses that are addressed by the Central and Coastal NCCP are considered fully mitigated under the Central and Coastal NCCP Act and the state and federal ESAs for impacts to covered habitats and habitat occupied by "identified" species. Take of Identified Species is authorized on all lands owned or controlled by participating landowners outside of the Reserve System, but within the Central and Coastal Sub-region, as outlined in the Implementation Agreement and NCCP described below:

- "no amendment to the Central and Coastal NCCP will be necessary for purposes of construction of infrastructure facilities (including utilities) as long as the amended infrastructure plans do not result in Incidental Take beyond that described and permitted by the Central and Coastal NCCP" (NCCP, page II-341),
- "the number of acres of coastal sage scrub and covered habitats on lands outside of the reserve system may fluctuate over time". The Central and Coastal NCCP also states that "due to dispersal patterns and periodic fluctuations in "Identified Species" population locations and numbers, the term "Incidental Take authorized" includes all coastal sage scrub habitat potentially impacted by participating landowners, regardless of the number of "Identified Species" occupying the area to be converted at the time habitat conversion actually occurs". In the Central and Coastal NCCP, it states that "if additional gnatcatchers do disperse onto such non-reserve lands owned by participating landowners at the time the Central and Coastal NCCP Implementation Agreement is signed, development on these lands shall be considered fully mitigated for purposes of coastal California gnatcatcher and coastal sage scrub impacts and no additional mitigation shall be required". (NCCP, page II-392).

Conditionally Covered Species Mitigation

Any impacts to plants that are Identified Species are fully authorized under the Central and Coastal NCCP, while impacts to plants that are Conditionally Covered Species, such as foothill mariposa lily have mitigation provisions associated with the amount of allowable take. The take of fewer than 20 individuals that would be impacted by project construction is authorized under the Central and Coastal NCCP. If it is found that the Viejo System Project would impact between 20 to 100 individuals, mitigation will be implemented consistent with the mitigation measures described in the NCCP (II-254). Mitigation options include:

- addressing design modification or other on-site measures that are consistent with the projects purposes, minimizing impacts to foothill mariposa lily habitat, and providing appropriate protection for any adjoining conserved mariposa lily habitat;

- providing an evaluation of salvage, restoration, enhancement and management of other conserved mariposa lily, or other mitigation techniques to determine the most appropriate mitigation technique to offset impacts, and implement mitigation consistent with the foregoing evaluation; and

- provide for monitoring and adaptive management of foothill mariposa lily consistent with Chapter 5 of the NCCP.

Any mitigation required for foothill mariposa lily will be developed in coordination with FWS and CDFG.

Minimization/Mitigation Measures – Construction Related Impacts

Specific obligations of the project applicant are outlined in the Minimization/Mitigation Measures-Construction Related Impacts, and would be required for Target Species, Identified Species, and coastal sage scrub impacts. The Central and Coastal NCCP "proposes that certain construction-related minimization measures be required for participating landowners to assure that development/construction within areas recommended to be authorized for Incidental Take of coastal sage scrub be undertaken in a manner that minimizes impacts on coastal California gnatcatchers presently using or in close proximity to the habitat to be converted. Compliance with the construction-related minimization measures is in accordance with the participating landowners individual section 10(a) permit pursuant to the Implementation Agreement".

The minimization/mitigation measures for construction related impacts are outlined below and are required for construction of the proposed project and any of the alternatives.

1. To the maximum extent practicable, no grading of coastal sage scrub habitat that is occupied by nesting coastal California gnatcatchers would occur during the breeding season (February 15 through July 15). It is expressly understood that this provision and the remaining provisions of these "construction-related minimization measures," are subject to public health and safety considerations. These considerations include unexpected slope stabilization, erosion control measures and emergency facility repairs. In the event of such public health and safety circumstances, landowners or public agencies/utilities will provide USFWS/CDFG with the maximum practicable notice (or such notice as is specified in the Central and Coastal NCCP) to allow for capture of coastal California gnatcatchers, coastal cactus wrens and any other coastal sage scrub Identified Species that are not otherwise flushed and will carry out the following measures only to the extent as practicable in the context of the public health and safety considerations.
2. Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of coastal sage scrub habitat to be avoided under the provisions of the Central and Coastal NCCP, are to be identified with temporary fencing or other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or other activities involving disturbance of coastal sage scrub, a survey would be conducted to locate coastal California gnatcatchers, coastal cactus wrens, and southern California rufous-crowned sparrows within 100 feet of the outer extent of projected soil disturbance activities and the locations clearly marked and identified on the construction/grading plans.
3. A monitoring biologist, acceptable to USFWS/CDFG would be on site during any clearing of coastal sage scrub. SCE will advise USFWS/CDFG at least seven (7) calendar days (and preferably fourteen (14) calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFG to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist will flush Identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they will be captured in mist nests, if feasible, and relocated to areas of the site to be protected or to the Central and Coastal NCCP Reserve System. It will be the responsibility of the monitoring biologist

to assure that Identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.

4. Following the completion of initial grading/earth movement activities, all areas of coastal sage scrub habitat to be avoided by construction equipment and personnel will be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking or storage of equipment or materials will be permitted within such marked areas.
5. In areas bordering the Central and Coastal NCCP Reserve System or Special Linkage/Special Management areas containing significant coastal sage scrub identified in the Central and Coastal NCCP for protection, vehicle transportation routes between cut-and-fill locations will be restricted to a minimum number during construction consistent with project construction requirements. Waste dirt or rubble will not be deposited on adjacent coastal sage scrub identified in the Central and Coastal NCCP for protection. Preconstruction meetings involving the monitoring biologist, construction supervisors and equipment operators will be conducted and documented to ensure maximum practicable adherence to these measures.
6. Coastal sage scrub identified in the Central and Coastal NCCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist.

Additional Mitigation Measures

Environmentally sensitive construction practices that will be implemented to minimize biological impacts before or during construction are listed below:

1. Schedule mass grading to occur outside of the rainy season. If mass grading occurs during the rainy season, appropriate best management practices should be implemented to maintain existing water flows within the watershed and to prevent sediment being deposited into Aliso Creek, other drainages and watersheds that could be indirectly impacted during construction.
2. Schedule fueling of construction equipment to only occur at a designated area at a distance greater than 30 meters from drainages and associated plant communities to preclude adverse water quality impacts.
3. Locate staging and/or lay down areas in disturbed habitat or developed areas to the extent possible. Staging areas shall be delineated on project maps and reviewed by the project biologist. If staging areas are placed outside of the study area, additional field assessments may be required, and additional impacts could occur.
4. Pre-construction surveys for raptors would be conducted. If nesting raptors are located, work within 500’ of the nest site would occur outside of the applicable nesting/fledgling period. If this is not possible, SCE would consult with CDFG and USFWS on the relocation of the nest and/or fledglings.

5. SCE has designed the H-frame structures to be raptor safe in accordance with *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996* (Avian Power Line Interaction Committee, 1996).
6. All areas of coastal sage scrub to be temporarily impacted shall be reseeded with an appropriate coastal sage scrub seed mix. It is recommended that the seed be collected on site or within the same county since the species will be environmentally adapted to the site conditions and to ensure genetic similarity with species presently on site.

FWS and CDFG have been informally consulted regarding the proposed Project and generally concur with the mitigation as described above. Correspondence is included in Appendix I.

1.5.5.1 Proposed Viejo Substation Site

All impacts in the Central and Coastal NCCP portion of the proposed Viejo substation site to Target Species, Identified Species, and coastal sage scrub, excluding Conditionally Covered sensitive plant species are fully mitigated under the Central and Coastal NCCP. To minimize impacts on coastal California gnatcatchers presently using or in close proximity to coastal sage scrub, the *Minimization/Mitigation Measures – Construction Related Impacts* discussed above will be implemented. If any Conditionally Covered sensitive plant species, specifically foothill mariposa lily, are located during surveys to be conducted in Spring 2003, mitigation will be implemented pursuant to the NCCP as discussed in the above section *Conditionally Covered Species Mitigation.* All *Additional Mitigation Measures* will also be implemented.

Implementation of all of the above-mentioned mitigation measures will reduce all impacts to biological resources to less than significant levels.

1.5.5.2 Alternative 1A - Proposed Subtransmission Line

All impacts in the Central and Coastal NCCP portion of this alternative to Target Species, Identified Species, and coastal sage scrub, excluding Conditionally Covered sensitive plant species are fully mitigated under the Central and Coastal NCCP. To minimize impacts on coastal California gnatcatchers presently using or in close proximity to coastal sage scrub, the *Minimization/Mitigation Measures – Construction Related Impacts* discussed above will be implemented. If any Conditionally Covered sensitive plant species, specifically foothill mariposa lily, are located during surveys to be conducted in Spring 2003, mitigation will be implemented pursuant to the NCCP as discussed in the above section *Conditionally Covered Species Mitigation.* All *Additional Mitigation Measures* will also be implemented.

Implementation of all of the above-mentioned mitigation measures will reduce all impacts to biological resources to less than significant levels.

There are no direct impacts to native habitats in the proposed Southern NCCP. Impacts to a disturbed riparian habitat area may require a Streambed Alteration Agreement from CDFG under Section 1600 of the California Fish and Game Code. All direct impacts resulting from the installation of an H-frame structure within this area would be to non-native vegetation. If it is

determined that a Streambed Alteration Agreement is required, all mitigation conditions will be implemented.

Implementation of the above-mentioned mitigation measures will reduce all impacts to biological resources to less than significant levels.

1.5.5.3 Alternative 1B - Subtransmission Line

All impacts in the Central and Coastal NCCP portion of this alternative to Target Species, Identified Species, and coastal sage scrub, excluding Conditionally Covered sensitive plant species are fully mitigated under the Central and Coastal NCCP. To minimize impacts on coastal California gnatcatchers presently using or in close proximity to coastal sage scrub, the *Minimization/Mitigation Measures – Construction Related Impacts* discussed above will be implemented. If any Conditionally Covered sensitive plant species, specifically foothill mariposa lily, are located during surveys to be conducted in Spring 2003, mitigation will be implemented pursuant to the NCCP as discussed in the above section *Conditionally Covered Species Mitigation.* All *Additional Mitigation Measures* will also be implemented. Implementation of all of these mitigation measures would reduce all impacts to biological resources to less than significant levels.

No impacts to Target Species, Identified Species, and coastal sage scrub, or Conditionally Covered sensitive plant species were identified or are anticipated for the underground segment of this alternative. Mitigation for the overhead segment of this Alternative 1B in the Central and Coastal NCCP would the same as discussed for Alternative 1A. No mitigation would be required for the Proposed Southern NCCP.

1.5.5.4 Alternative 1C - Subtransmission Line

No impacts to Target Species, Identified Species, and coastal sage scrub, or Conditionally Covered sensitive plant species were identified or are anticipated. No mitigation would be required for the Central and Coastal NCCP or the Proposed Southern NCCP.

1.6 Cultural Resources

Potential impacts to cultural resources could occur if:

- A substantial adverse change in the significance of a historical resource either listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources, or a local register of historic resources were to occur, or
- The project were to cause a substantial change in the significance of a unique archaeological resource, destroy a unique paleontological resource or site or disturb human remains, including those interred outside of formal cemeteries.

Potential impacts to archaeological and historic resources are further defined as follows:

- Potentially Significant Impacts are those resulting from construction, operation, or maintenance activities that would adversely impact the integrity of significant or potentially significant prehistoric archaeological resources, and are unavoidable as the project is planned. Examples of these resources are archaeological resources or historic districts that cover an extensive area, are materially dense, and provide little or no opportunity for avoidance or adequate mitigation.

- Less Than Significant Impacts are those resulting from construction, operation, or maintenance activities that could adversely impact the integrity of significant or potentially significant prehistoric archaeological resources, and for which there is sufficient opportunity for resource avoidance. Examples of these resources are archaeological resources or historic sites that have an uneven distribution providing adequate opportunities for avoidance, or for which adequate mitigation is available.

- No Impacts would occur where no known or previously unrecorded resources are present in the project area or close enough to be impacted by the project.

Paleontological resource sensitivity is further defined as follows:

- Paleontologic sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the rock unit in producing significant fossils, and fossil localities that are recorded from that unit. Paleontologic sensitivity is derived from the fossil data collected from the entire geologic unit, not just from a specific survey.

A three-tiered classification system for paleontological sensitivity, recommended by the Society of Vertebrate Paleontologists (SVP) and recognized in California is listed below:

- High sensitivity – Indicates fossils are currently observed onsite, localities are recorded within the study area and/or the unit has a history of producing numerous significant fossil remains.
- Low sensitivity – Indicates significant fossils are not likely to be found because of a random fossil distribution pattern, extreme youth of the rock unit and/or the method of rock formation, such as alteration by heat and pressure.
- Indeterminate Sensitivity – Unknown or undetermined sensitivity indicates that the rock unit has not been sufficiently studied or lacks good exposures to warrant a definitive rating. This rating is treated initially as having a high sensitivity or potential. After study or monitoring, the unit may fall into one of the other categories.

As taken from the paleontological guidelines set forth by Orange County (Cooper and Eisentraut, 2000), fossils are considered to be scientifically significant if they meet or potentially meet any one or more of the following criteria:

- Taxonomy - fossils that are scientifically judged to be important for representing rare or unknown taxa, such as defining a new species.

- Evolution – fossils that are scientifically judged to represent important stages or links in evolutionary relationships, or fill gaps or enhance under represented intervals in the stratigraphic record.
- Biostratigraphy – fossils that are scientifically judged to be important for determining or constraining relative geologic (stratigraphic) age, or for use in regional to interregional stratigraphic correlation problems.
- Paleoecology – fossils that are scientifically judged to be important for reconstructing ancient organism community structure and interpretation of ancient sedimentary environments.
- Taphonomy – fossils that are scientifically judged to be exceptionally well or unusually or uniquely preserved, or are relatively rare in the stratigraphy.

1.6.1 Proposed Substation Site

Construction:
There is one previously recorded archaeological site (CA-ORA-905) within the 220 kV corridor north of the Aliso Creek Area of Potential Effect (APE) adjacent to the substation site that may be impacted by the 220 kV transmission line modifications. This site is part of the National Register-eligible Upper Aliso Creek Historic District. CA-ORA-905 is a lithic scatter with flakes, debitage, and scrapers (McCoy 1980). McCoy and Phillips saw no evidence of subsurface cultural materials and a minimal amount of culturally modified lithics south of Tower M22-T4 and east of the 220 kV corridor access road during their 1980 survey. Site CA-ORA-905 and the seven other sites that make up the Upper Aliso Creek Historic District are important because they represent unified activity areas and the sharing of common resources with cultural patterns and processes that contribute to the understanding of the prehistory of the study area. By enabling present and future researchers to view the region holistically through documentation of intersite relationships (settlement systems), surpassing limited ethnographic sketches or general hypothetical archaeological interpretation, the sites contribute more as part of a district than individually (McCoy and Phillips 1980:344347). All potential impacts to CA-ORA-905 are classified as less than significant based on the scope of construction and mitigation measures proposed in Section 5.6.5. No new cultural material was identified as a result of the current investigation as discussed in Section 4.6.1.6.

The proposed Viejo Substation site has been cleared and graded. No places of particular Native American traditional or religious importance have been identified within the proposed Viejo Substation site. The Native American Heritage Commission (NAHC) was contacted on December 2, 2002 and asked to search the Sacred Lands File for any cultural resources it felt would require attention in regard to the construction of the Viejo System Project. On December 5, 2002, the NAHC stated that a search failed to indicate the presence of Native American cultural resources in the immediate project area. A list of Native American individuals and organizations that may have knowledge of cultural resources in the project area was enclosed in the response from NAHC. SCE will contact these individuals and organizations if, during SCE's archaeological monitoring, human remains are encountered. No new resources were identified during the field survey performed as part of the cultural resources investigation for the proposed project. No impacts are anticipated to occur.

The proposed substation site is underlain by the Oso Member of the Capistrano Formation and Quaternary Non-Marine Terrace Deposits. Both these geologic units are highly sensitive and therefore construction of the substation facilities may result in the destruction of significant paleontological resources unless proper mitigation measures are implemented.

Operation: No cultural resources would be impacted by operation of the proposed Viejo Substation.

1.6.2 Alternative 1A - Proposed Subtransmission Line

Construction:
There is one previously recorded archaeological site (CA-ORA-905) within the 220 kV corridor north of the Aliso Creek Area of Potential Effect (APE) that may be impacted by construction of the H-frame structures. This site is part of the National Register-eligible Upper Aliso Creek Historic District. All potential impacts to CA-ORA-905 are classified as less than significant based on the scope of construction and mitigation measures proposed in Section 5.6.5. No new cultural material was identified as a result of the current investigation as discussed in Section 4.6.1.6.

Improvements within the 220 kV corridor, south of Aliso Creek would not impact any other previously recorded archaeological site. No new sites were identified during the recent field survey.

The subtransmission line route in Alternative 1A is underlain by Oso Member of the Capistrano Formation, Quaternary Non-Marine Terrace Deposits, the La Vida and Soquel Members of the Puente Formation, the Monterey Formation, the Topanga Formation, Quaternary Alluvium and Colluvium, and Quaternary Landslide Deposits. These formations are highly sensitive geologic units and therefore construction of the Alternative 1A subtransmission line may result in the destruction of significant paleontological resources unless proper mitigation measures are implemented.

Operation: Once in operation, the proposed subtransmission lines would have no impact on cultural resources.

1.6.3 Alternative 1B - Subtransmission Line

Construction:
Construction of the overhead segment of Alternative 1B may have the same impacts on CA-ORA-905 as Alternative 1A. All potential impacts to CA-ORA-905 are classified as less than significant based on the scope of construction and mitigation measures proposed in Section 5.6.5. Improvements within the 220 kV corridor, south of Aliso Creek are not likely to impact any previously recorded archaeological sites. No new sites were identified during the recent field survey. These sites were determined ineligible to the National Register individually, and as part of a historic district. No new cultural material was identified as a result of the current investigation as discussed in Section 4.6.1.6.

The subtransmission line route in Alternative 1B is underlain by Oso Member of the Capistrano Formation, Quaternary Non-Marine Terrace Deposits, the La Vida and Soquel Members of the Puente Formation, the Monterey Formation, the Topanga Formation, Quaternary Alluvium and Colluvium, and Quaternary Landslide Deposits. These geologic units and formations are highly sensitive and therefore construction of the Alternative 1B subtransmission line may result in the destruction of significant paleontological resources unless proper mitigation measures are implemented.

Operation: Once in operation, the proposed subtransmission lines would have no impact on cultural resources.

1.6.4 Alternative 1C - Subtransmission Line

Construction:
The portion of Alternative 1C north of the Viejo Substation site could have potentially significant impacts on CA-ORA-825 and –826, which are also located within the Upper Aliso Creek Historic District. CA-ORA-825 was originally recorded as an extensive lithic scatter with the potential for subsurface deposits (Oxedine et.al. 1979). McCoy and Phillips (1980) tested this site and concluded that there are subsurface deposits within the 0 to 10 centimeter level. CA-ORA-826 was originally recorded as small lithic scatter (Oxedine and Pink 1979). Due to the lack of artifacts discovered during the 1980 survey, no subsurface testing was conducted. No new cultural material was identified as a result of the current investigation as discussed in Section 4.6.1.6. Construction of Alternative 1C would result in significant impacts on CA-ORA-825 and -826.

Four additional archaeological sites within one-quarter mile of the Alternative 1C alignment (CA-ORA-100305, -1145, -947, and –385) were either determined ineligible to the National Register individually, or as part of a historic district, or were not previously evaluated. Alternative 1C would not impact these sites.

The subtransmission line route in Alternative 1C is underlain by Oso Member of the Capistrano Formation, Quaternary Non-Marine Terrace Deposits, the Monterey Formation, the Topanga Formation, Quaternary Alluvium and Colluvium, and Quaternary Landslide Deposits. These geologic units are highly sensitive and therefore construction of the Alternative 1C subtransmission line may result in the destruction of significant paleontological resources unless proper mitigation measures are implemented.

Operation: Once in operation, the proposed subtransmission lines would have no impact on cultural resources.

1.6.5 Mitigation

1.6.5.1 Proposed Viejo Substation Site

Archaeological and Historical Resources:
No known archaeological sites occur on the Viejo Substation site. No new resources were identified during the field survey performed as part of the cultural resources investigation for the proposed project. However, previously recorded archaeological resources occur in close proximity. As a result, SCE will conduct archaeological monitoring for all LST and TSP related ground-disturbing activities north of El Toro Road. Monitoring will reduce any potential impacts to less than significant levels.

Paleontological Resources:
The following mitigation measures have been developed to reduce the adverse impacts of project construction on paleontological resources to a less than significant level. The measures are derived from the guidelines of the SVP and meet the requirements of Orange County and CEQA. These mitigation measures have been used throughout California and have been demonstrated to be successful in protecting paleontological resources while allowing timely completion of construction:

1. An Orange County Certified Paleontologist will be retained by SCE to supervise monitoring of construction excavations and to produce a mitigation plan for the proposed project. Paleontological monitoring will include inspection of exposed rock units and microscopic examination of matrix to determine if fossils are present. The monitor will have authority to temporarily divert grading away from exposed fossils in order to recover the fossil specimens.
2. If microfossils are present, the monitor will collect matrix for processing. In order to expedite removal of fossiliferous matrix, the monitor may request heavy machinery assistance to move large quantities of matrix out of the path of construction to designated stockpile areas. Testing of stockpiles will consist of screen washing small samples (approximately 200 pounds) to determine if significant fossils are present. Productive tests will result in screen washing of additional matrix from the stockpiles to a maximum of 6000 pounds per locality to ensure recovery of a scientifically significant sample.
3. Quaternary Alluvium, Colluvium and Quaternary Landslide Deposits have a low paleontological sensitivity level, and will be spot-checked on a periodic basis to insure that older underlying sediments are not being penetrated. All soil removal will be monitored.
4. An Orange County Certified Paleontologist will prepare monthly progress reports to be filed with the client.
5. Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to allow analysis, and deposited in a designated repository such as the Interpretive Center at Ralph Clark Regional Park, an Orange County facility, which shall have the right of first refusal to the collection, or the Natural History Museum of Los Angeles County.

6. At each fossil locality, field data forms will record the locality, stratigraphic columns will be measured and appropriate scientific samples submitted for analysis.
7. The Orange County Certified Paleontologist will prepare a final mitigation report to be filed with the client, the lead agency, and the repository.

Implementation of the measures above would mitigate all potential impacts to paleontological resources to a less than significant level.

1.6.5.2 Alternative 1A - Proposed Subtransmission Line

Archaeological and Historical Resources:
Potential impacts to known archaeological resources would be minimized and brought to a level of less than significant by SCE retaining an archaeological monitor who would be present for all H-frame structure construction-related ground-disturbing activities north of El Toro Road. Subsurface testing is not required.

Paleontological Resources:
The mitigation measures for this Alternative 1A are the same as for the proposed substation site discussed in Section 5.6.5.1. Implementation of the measures discussed above in Section 5.6.5.1, Paleontologic Resources, would mitigate all potential impacts to paleontological resources to a less than significant level.

1.6.5.3 Alternative 1B - Proposed Subtransmission Line

Archaeological and Historical Resources:
Potential impacts to known archaeological resources would be minimized by SCE retaining an archaeological monitor who would be present for all H-frame structure construction-related ground-disturbing activities north of El Toro Road. Subsurface testing is not required. No additional mitigation would be required. Due to previous ground disturbance resulting from road construction, no mitigation is required for construction taking place within city streets.

Paleontological Resources:
The mitigation measures for this Alternative 1B are the same as for the Proposed Substation Site in Section 5.6.5.1. Implementation of the measures discussed above in Section 5.6.5.1, Paleontological Resources, would mitigate all potential impacts to paleontological resources to a less than significant level.

1.6.5.4 Alternative 1C - Proposed Subtransmission Line

Archaeological and Historical Resources:
There is potential for significant impacts to CA-ORA-825, and –826 located north of El Toro Road, associated with subsurface disturbance. Extensive mitigation measures, in addition to monitoring, would be required to reduce the potentially significant impacts to CA-ORA-825 and –826. Extensive mitigation measures may include: standard test pits, testing for depth and extent of the archaeological deposit, or 100% data recovery. Implementation of these measures would not mitigate impacts to less than significant levels. Due to previous ground disturbance

resulting from road construction, no mitigation is required for construction taking place within city streets south of El Toro Road.

Paleontological Resources:
The mitigation measures for this Alternative 1C are the same as for the proposed substation site in Section 5.6.5.1. Implementation of the measures discussed above in Section 5.6.5.1, Paleontologic Resources, would mitigate all potential impacts to paleontological resources to a less than significant level.

1.7 Geologic Conditions

Potential geologic impacts could occur if the proposed substation, the 220 kV transmission lines the 66 kV subtransmission lines, or people associated therewith, were exposed to one or more of the following:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
- Seismic ground shaking, seismic-related ground failure, liquefaction.
- Inundation by seiche, tsunami, mudflow.
- Landslides and flooding.
- Wildland fires.
- Substantial soil erosion or the loss of topsoil.
- Loss of unique geologic features.
- On-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Expansive soil that could create substantial risks to life or property.
- Where sewers are not available for the disposal of wastewater, and the soil would not be capable of supporting the use of septic tanks or alternative wastewater disposal systems.

1.7.1 Proposed Substation Site

Construction: The proposed Viejo Substation site is not located within the Alquist-Priolo Earthquake Fault Zoning area; and thus, is not subject to the Alquist-Priolo Earthquake Fault Zoning Act. The site is not within proximity to any active earthquake faults; however, like all of Southern California, it is subject to impacts from seismic activities. The closest known active faults to the substation site are the Whittier-Elsinore, Newport-Inglewood, San Jacinto and the San Andreas fault zones (see Figure 4-8, Regional Fault Map). Since there is potential for an earthquake in the area, the substation electrical equipment would be constructed in accordance with the Institute of Electrical and Electronics Engineers (IEEE) 693 “Recommended Practices for Seismic Design of Substations” and buildings would be designed in accordance with the Uniform Building Code to minimize impact from possible seismic ground shaking, seismic-related ground failure or liquefaction.

The proposed Viejo Substation site is flat with cut-slopes rising to the east towards the 220 kV corridor and natural slopes descending to the west to the SR 241 Foothill Transportation Corridor. The southern portion of the Foothill Ranch Planned Community is free of any significant slope stability problems (Southern California Edison, 1994) and liquefaction within the alluvial sediments of the site is considered remote (Pacific Soils Engineering, Inc. W.O. 500071GP, 1994).

During construction, erosion control measures would be necessary to avoid and/or minimize soil erosion and the deposit of surface materials off-site. An estimated total of 1,063 cubic yards of soil material would be removed for the proposed tower and pole footings. Additionally, pads would be cleared for tower construction lay down areas. Because project disturbance would be greater than 5 acres, specific erosion control measures would be identified as part of the National Pollution Discharge Elimination System (NPDES) permit and Stormwater Pollution Prevention Plan (SWPPP) required for the project.

Operation: Once in operation the Viejo Substation would have no impact on geologic or soil resources on site or within the surrounding area.

1.7.2 Alternative 1A - Proposed Subtransmission Line

Construction: Geologic characteristics within the 220 kV corridor are consistent with those associated with the proposed Viejo Substation site. NPDES and SWPPP documentation would indicate appropriate mitigation measures to avoid and/or minimize erosion from cleared areas.

Operation: Once operational, the subtransmission H-Frame structures and conductors would have no impact on geologic characteristics within the study area. Due to the flexion inherent in overhead subtransmission lines, the lines can generally withstand surface fault ruptures.

1.7.3 Alternative 1B - Subtransmission Line

Construction: Geologic features and potential impacts associated with Alternative 1B are the same as described for the proposed Viejo Substation site and 220 kV corridor between the substation site and Santa Margarita Parkway. South of Santa Margarita Parkway, appropriate control measures would be implemented to minimize erosion of excavated material. No impacts to geologic resources associated with construction of this alternative are anticipated.

Operation: Operation of this Alternative 1B would have no impact on geologic and related resources. Due to the flexion inherent in overhead subtransmission lines, the lines can generally withstand surface fault ruptures, while buried subtransmission lines have less flexion and therefore are more susceptible to impacts from surface fault ruptures.

1.7.4 Alternative 1C - Subtransmission Line

Construction: Geologic features and potential impacts associated with this alternative are the same as described for Alternative 1B and the proposed action. No impacts to geologic resources are anticipated from this alternative.

Operation: During operation, this Alternative 1C would have no impact on geologic and related resources. Buried subtransmission lines have less flexion than overhead lines and therefore more susceptible to impacts from surface fault ruptures.

1.7.5 Mitigation

Measures to avoid and/or minimize impacts to geologic resources have been included as part of the project design or would be incorporated per regulation and SCE standard construction and operation protocols. As a result, no impacts related to geologic resources are anticipated and no mitigation measures are offered.

1.8 Hazards and Hazardous Materials

Potential impacts that may be caused by the project include the following:

- Creation of a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous waste;
- Creation of a significant hazard to the public or the environment though reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment;
- Reasonable anticipation to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- If the project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- If the project is 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, result in a safety hazard for people residing or working in the project area;
- If the project is within the vicinity of a private airstrip, would it result in a safety hazard for people residing or working in the project area;
- If it impairs implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- Exposure to people or structures to the risk of loss, injure or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

1.8.1 Proposed Substation Site

Construction: As previously stated in Section 4.8, the proposed Viejo Substation site is free of any hazardous materials or waste. Construction activities would involve the operation of heavy equipment and support vehicles on site. Thus, potential exists for hydraulic fluid leaks and/or fuel spills to occur. To minimize, avoid and/or clean up such material should an unforeseen spill

occur, SCE would be responsible for following SCE's Storm Water Pollution Prevention Plan (SWPPP). No impacts from exposure to hazardous materials are anticipated.

Operation: The proposed transformer banks contain oil that could leak or spill if the transformers were damaged from a seismic event, fire or other unforeseen incident. To minimize potential impacts, SCE would provide containment and/or diversionary structures or equipment to prevent discharge of an oil spill carried by rain as described in the Spill Prevention Control and Countermeasure (SPCC) requirements (40 CFR Part 112.1 through Part 112.7). An SPCC plan will be prepared by SCE upon finalization of the Viejo Substation design.

Operation of the Viejo System would not cause the routine transport, use, or disposal of hazardous materials. The Viejo Substation is not included on a list of hazardous materials sites nor would operation impact operation of an airport or private airstrip. The Viejo Substation would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan nor would it expose people or structures to wildland fires.

1.8.2 Alternative 1A - Proposed Subtransmission Line

Construction: Construction of the proposed 66 kV subtransmission line would occur within the existing 220 kV corridor. As described for the Viejo Substation, construction of the subtransmission line would involve use of heavy equipment and support vehicles within the 220 kV corridor. Thus, potential exists for hydraulic fluid leaks and/or fuel spills to occur. To minimize, avoid and/or clean up such material should an unforeseen spill occur, SCE would be responsible for following the SWPPP.

Operation: Operation of the proposed subtransmission lines would not create additional hazards. SCE would minimize fire risk by maintaining a brush clearance in accordance with applicable State and Federal laws.

1.8.3 Alternative 1B - Subtransmission Line

Construction: Alternative 1B is a combination of the northern section of the Alternative 1A proposed subtransmission line route from the Viejo Substation site south to Santa Margarita Parkway. As described for the Viejo Substation, construction of the subtransmission line would involve use of heavy equipment and support vehicles within the 220 kV corridor and city streets. Thus, potential exists for hydraulic fluid leaks and/or fuel spills to occur. To minimize, avoid and/or clean up such material should an unforeseen spill occur, SCE would be responsible for following the SWPPP.

Operation: Once in operation, Alternative 1B would not create any hazardous waste or additional hazards. SCE would minimize fire risk by maintaining a brush clearance in accordance with applicable State and Federal laws for the overhead portion of this alternative. The underground segment of the line would not create hazardous materials or hazards to people or the environment.

1.8.4 Alternative 1C - Subtransmission Line

As described for the Viejo Substation, construction of the Alternative 1C subtransmission line would involve use of heavy equipment and support vehicles within city streets. Thus, potential exists for hydraulic fluid leaks and/or fuel spills to occur. To minimize, avoid and/or clean up such material should an unforeseen spill occur, construction would be responsible for following the SWPPP.

Operation: Operation of the Alternative 1C improvements would not create any hazardous waste or conditions that would adversely impact the public.

1.8.5 Mitigation

Measures to avoid and/or minimize impacts from hazards or hazardous materials have been included as part of the project design or would be incorporated per regulation and SCE standard construction and operation protocols. As a result, no impacts from hazards or hazardous materials are anticipated and no mitigation measures are deemed necessary.

1.9 Hydrology and Water Quality

Potential hydrological and water quality impacts could occur if the proposed substation and/or 220 kV transmission or 66 kV subtransmission lines were to cause one or more of the following:

- Violation of the Santa Ana Regional Water Quality Board and/or San Diego Regional Water Quality Board water quality standard or waste discharge requirements.
- Substantial depletion of groundwater supplies or substantial interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level
- Substantial alteration of the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Substantial alteration of the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- Creation or contribution to runoff water, which would exceed the capacity of existing or planned storm water drainage systems.
- Placement of housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Placement within a 100-year floodplain structure that would impede or redirect flood flows.

1.9.1 Proposed Substation Site

Construction: Potential discharge, if any, would be limited to runoff during precipitation. As noted in Section 4.9 of this document, a NPDES permit would be obtained and a SWPPP prepared to

ensure consistency with the Santa Ana Regional Water Quality Board's water quality standards and/or discharge requirements.

As noted in Section 3.3.1.2, during site preparation, all hillside drainage structures would be cleaned and repaired. A concrete curb and 3-foot drainage swale would be placed along the full length of and to the outside of the east fence of the substation to direct hillside runoff north, away from the substation pad. The site would have a crushed rock surface that would allow surface storm water to sheet flow from the southerly end of the substation to three (3) existing concrete catch basins located at the northerly end of the graded pad, where it would be pumped and conveyed to the public storm water system through existing reinforced concrete pipes.

Runoff volumes are not forecasted to be substantial; and therefore, would not exceed the capacity of existing or planned storm water drainage systems. The proposed Viejo Substation site is not located on or in proximity to any known source of groundwater nor would groundwater resources be impacted during construction. All water would come from municipal sources.

There are no streams or rivers within close proximity to the substation site thus no stream or river would be altered in a manner that would result in substantial erosion or siltation on or off site nor would storm water be directed into such resources. No housing would be constructed as part of the proposed project nor would structures be placed within a 100-year floodplain structure.

Operation: Once in operation, the Viejo Substation would comply with all of the Santa Ana Water Quality Board water quality standards and/or drainage discharge requirements. All storm water would be conveyed through the City of Lake Forest system and treated to municipal standards. No ground or surface water resources would be impacted nor would any subsequent structures be placed on site or result in activities that could adversely impact or be impacted by site or neighboring hydrology.

1.9.2 Alternative 1A - Proposed Subtransmission Line

Construction: Construction impacts would generally be the same as described above for the proposed Viejo Substation. Storm water erosion control measures would be implemented for all areas cleared for tower construction. A NPDES permit would be obtained and a SWPPP prepared to ensure consistency with the Santa Ana Regional Water Quality Board (SARWQB) and San Diego Regional Water Quality Board's (SDRWQB) water quality standards and/or discharge requirements. All activities would be subject to storm water control requirements defined in the NPDES permit and SWPPP.

The existing and proposed Alternative 1A subtransmission line route traverses over Aliso Creek, which is located just north of El Toro Road. No H-Frame structures would be constructed in proximity to Aliso Creek and all conductors would span the creek. A TSP several hundred feet north of Aliso Creek would be removed. To minimize potential erosion during the TSP removal, construction activities would be subject to storm water control measures identified in the SWPPP. Thus, the streambed and/or flow of Aliso Creek would not be impacted. Construction of the subtransmission line structures would not create nor contribute to runoff water that could exceed the capacity of existing or planned storm water drainage systems. No project

components would be placed within the a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation maps.

Operation: Operational impacts would be the same as described for the proposed Viejo Substation. Once operational, the subtransmission line and structures would be periodically maintained. However, these activities would not impact hydrologic resources within or adjacent to the 220 kV corridor.

1.9.3 Alternative 1B - Subtransmission Line

Construction: The overhead construction impacts would be the same as described for Alternative 1A between the Viejo Substation site and Santa Margarita Parkway. For the segment located underground within the roadways, the SWPPP would be implemented to minimize erosion from soil stockpiles or disturbed areas within the roadways. This SWPPP would be consistent with the SARWQB and SDRWQB's water quality standards and/or discharge requirements.

Operation: After construction is complete, the project would have no operational impact on hydrologic or water resources.

1.9.4 Alternative 1C - Subtransmission Line

Construction: With the exception of 200-feet within SCE's access road located on the northern side of the proposed substation site, Alternative 1C would be constructed entirely within urban arterials. Impacts would be the same as described for Alternative 1B underground section.

As noted in Section 4.9, Aliso Creek crosses below a bridge at the intersection of El Toro Road and Portola Parkway. The 66 kV subtransmission line would pass through a conduit attached to the bridge structure and thus, would not disturb the bed or bank of Aliso Creek.

Construction would not involve the placement of housing or any structures or project components within a 100-year floodplain as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation maps.

Operation: Operational impacts would be the same as described for Alternative 1B.

1.9.5 Mitigation

Measures to avoid and/or minimize impacts to hydrology or water quality have been included as part of the project design or would be incorporated per regulation and SCE standard construction and operation protocols. As a result, no impacts to hydrology or water quality are anticipated and no mitigation measures are deemed necessary.

1.10 Land Use and Planning

Potential land use and planning impacts would occur if:

- Construction of the proposed Viejo Substation and 220 kV transmission lines and the 66 kV subtransmission lines caused the physical division of an established community or conflicted with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.
- The project were to conflict with any applicable habitat conservation plan or natural communities conservation plan.

1.10.1 Proposed Substation Site

Construction: The proposed Viejo Substation site is part of the Foothill Ranch Planned Community Development. The substation site was zoned for light industrial use. The use of this site for a substation is consistent with the current land use designation. Construction of the proposed Viejo Substation would not cause the physical division of an established community or conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project as defined in Section 4.10 of this document.

Operation: The proposed Viejo Substation is located in a light industrial area. No established residential communities are located adjacent to the site. The nearest established community is located approximately 1 mile northeast of the site and would not be impacted by the proposed development.

The proposed site is located adjacent to the SCE Viejo Conservation Bank. Construction activities associated with the substation would occur on the existing graded lot and would not impact the adjacent SCE Viejo Conservation Bank (see Section 5.5 of this document).

1.10.2 Alternative 1A - Proposed Subtransmission Line

Construction: The construction of the proposed subtransmission line would occur within an existing 220 kV corridor; and thus, would be consistent with applicable land use plans, policies and regulations for the City of Lake Forest and the City of Mission Viejo.

The 220 kV corridor runs adjacent to light industrial, recreational and residential areas in both the City of Lake Forest and the City of Mission Viejo. However, because a new utility corridor is not being established, the project would not divide an established community or conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.

Operation: No land use impacts associated with operation of the proposed subtransmission line are anticipated.

1.10.3 Alternative 1B - Subtransmission Line

Construction: All construction would occur within an existing 220 kV corridor or in urban streets for the underground portion. No land use changes associated with project construction would occur.

Operation: No land use impacts would occur from operation of Alternative 1B.

1.10.4 Alternative 1C- Subtransmission Line

Construction: All construction would occur within urban streets. No land use changes associated with project construction would occur.

Operation: No land use impacts would occur from operation of Alternative 1C.

1.10.5 Mitigation

The proposed project as defined would be consistent with applicable land use plans and implementation regulations. As a result, no land use impacts are anticipated and no mitigation measures are offered.

1.11 Mineral Resources

Adverse impacts could occur if:

- The project caused loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state.
- The project development resulted in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

1.11.1 Proposed Substation Site

Construction: The proposed site is not delineated as a locally important mineral resource recovery site in either the General Plan for the City of Lake Forest or Foothill Ranch Planned Community Specific Plan. No mineral resources would be impacted by project construction.

Operation: Operation of the substation would have no impact on mineral resources.

1.11.2 Alternative 1A - Proposed Subtransmission Line

Construction: The 220 kV corridor is not located in an area that contains known mineral resources or is delineated as a locally important mineral resource by the City of Lake Forest General Plan, Foothill Ranch Planned Community Development Specific Plan or the City of Mission Viejo General Plan. No impacts to mineral resources would occur.

Operation: Operation of the subtransmission line would have to impact on mineral resources.

1.11.3 Alternative 1B - Subtransmission Line

Construction: For the northern segment between the Viejo Substation site and Santa Margarita Parkway, impacts would be the same as identified for Alternative 1A. The remainder of the subtransmission line would be constructed within urban arterials. Because the arterials are developed, no mineral resources are anticipated to occur within the underground portion of the line route.

Operation: No impacts to mineral resources would occur under Alternative 1B.

1.11.4 Alternative 1C - Subtransmission Line

Construction: Impacts would be the same as described for the urban arterial segment of Alternative 1B. Alternative 1C would be located adjacent to the El Toro Materials Sand and Gravel Quarry. However, construction would have no impact on quarry operation.

Operation: Since subtransmission line route Alternative 1C would be predominantly located within urban arterial roads, it would have no impact on mineral resources.

1.11.5 Mitigation

No mineral resources occur within the project area. No impacts would occur thus, no mitigation is offered.

1.12 Noise

Potential noise impacts are based on the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels;
- Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;
- For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

1.12.1 Proposed Substation Site

Construction: Equipment operation is the primary noise source associated with construction activities. Noise levels are dependent on several factors including the number of machines operating within an area at a given time and the distance between the source(s) and receiving properties. Typically, noise generated from construction activities ranges between 80 and 90 dBA 50 feet from an active construction area. The nearest residential properties are located approximately 1 mile northeast of the site. Given the background noise in the study area (see Section 4.12), it is likely construction noise would be inaudible at this distance.

Noise levels generated by substation construction would comply with the City of Lake Forest Noise Ordinance (Chapter 11.16, Section 11.16.4-6 *Exterior Noise Standards)*. It is designed to protect sensitive properties such as residences and does not apply to commercial or light industrial receivers. To remain in compliance, activities on site must not cause noise levels at receiving property lines to exceed 55 dBA during the daytime. Regulations are primarily designed to minimize noise associated with operation activities as temporary noise associated with substation construction would be exempted from the provisions of Chapter 11.16. As defined in Section 11.16.4-6 under Section 4-6-7(e), noise sources associated with construction, repair, remodeling, or grading of any real property are exempt provided activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a Federal Holiday. Construction of the proposed substation would generally adhere to the noise ordinance provisions set by the City of Lake Forest. It may be necessary, particularly during cut over activities, to work during nighttime hours when loads on the lines are reduced. Should the need arise due to work outside the aforementioned local ordinances, SCE will comply with variance procedures requested by the City of Lake Forest.

Operation: As noted in Section 4.12 of this document, monitoring data show that daytime sound levels average near 45 dBA. During nighttime hours, sound levels dropped to a minimum of 32.8 dBA between 3 and 4 a.m. Noise sources in the project area include traffic noise from SR 241 Foothill Transportation Corridor, located south of the site, aircraft flyovers, local traffic and activities at business locations adjacent to the site (Veneklasen Associates, 2002).

As part of the noise analysis, potential noise levels associated with the operation of two new 220/66 kV, 560 MVA transformers in the No. 1A and 2A bank positions, and two new 66/12 kV, 56 MVA, NEMA-6 transformers in the bank position (see Figure 3-4, Proposed Site Plan) were studied. Study results show that the transformers would slightly increase noise levels at the Viejo Substation site property line; however, noise would not be audible at the nearest commercial or residential receivers (Veneklasen Associates, Inc, 2002). Thus, because sensitive properties would not be subject to permanent increases in ambient noise levels, no noise impacts are anticipated to occur.

1.12.2 Alternative 1A - Proposed Subtransmission Line

Construction: Construction noise generated within the 220 kV corridor would be similar in scope to that defined for the Viejo Substation site. Construction of the proposed subtransmission line would generally adhere to the noise ordinance provisions set by the City of Mission Viejo and the City of Lake Forest. It may be necessary, particularly during cut over activities, to work during nighttime hours when loads on the lines are reduced. Should the need arise to work outside the time permitted in the aforementioned local ordinances, SCE will comply with variance procedures requested by the City of Lake Forest, and the City of Mission Viejo.

Operation: Typical 22 kV transmission and 66 kV subtransmission line noise consists of corona noise created by high voltage discharge from conductors and/or insulators and magnetostriction hum from conductors. Corona noise is characterized by a buzzing or humming sound. Both types of noise are usually worse when the conductors and insulators are wet, such as during rain or fog.

Porcelain insulators are currently used on the existing 66 kV lines. New polymer insulators would be installed when the subtransmission lines are replaced. This could result in a reduction in noise levels associated with 66 kV subtransmission line operation. However, the noise reduction associated with operation of the 66 kV subtransmission line with new polymer insulators would not be noticeable because of the noise produced by the 220 kV transmission lines. Because sensitive properties would not be subject to permanent change in ambient noise levels, no noise impacts are anticipated to occur.

1.12.3 Alternative 1B - Subtransmission Line

Construction: Construction noise impacts associated with the above ground portion of Alternative 1B would be the same as those described for Alternative 1A. The below ground construction would occur within urban arterial roads within industrial, residential and commercial zones within the City of Lake Forest and the City of Mission Viejo. Construction noise would be temporary and adhere to the aforementioned noise ordinances. Should construction be necessary outside the hours prescribed in the noise ordinance, SCE will comply with variance procedures requested by the City of Lake Forest, and the City of Mission.

Operation: Noise impacts associated with the segment from the Viejo Substation site south to Santa Margarita Parkway would be the same as those described for Alternative 1A. Because the segment south of Santa Margarita Parkway to the Chiquita Substation would be underground, no noise impacts are anticipated to occur.

1.12.4 Alternative 1C - Subtransmission Line

Construction: Project construction would occur within urban arterial roads within industrial, residential and commercial zones within the City of Lake Forest and the City of Mission Viejo. Construction noise would be temporary and adhere to the aforementioned noise ordinances. Should construction be necessary outside the hours prescribed in the noise ordinance, a variance would be obtained from the Cities of Lake Forest and Mission Viejo as appropriate.

Operation: Because the subtransmission line would be underground, no noise impacts are anticipated to occur.

1.12.5 Mitigation

Measures to avoid and/or minimize noise impacts have been included as part of the project design or would be incorporated per regulation and SCE standard construction and operation protocols. As a result, no noise impacts are anticipated and no mitigation measures are offered.

1.13 Population and Housing

Impacts to population and/or housing could occur if:

- The project induces substantial population growth in the area, either directly or indirectly.

- The project is anticipated to displace existing housing and/or people necessitating relocation and/or construction of replacement housing elsewhere.

1.13.1 Proposed Substation

Construction: Construction of the Viejo Substation site is being proposed in response to anticipated population growth within SCE's service area. The project is not anticipated to induce population growth. It would allow SCE to continue providing service to current and future customers. The proposed Viejo Substation would not displace existing housing and/or people necessitating relocation and/or construction of replacement housing elsewhere.

Operation: Operation of the proposed Viejo Substation is essential to meet projected electrical load requirements in the South Orange County area. Project operation would not displace any existing housing or people necessitating the construction of replacement housing.

1.13.2 Alternative 1A - Proposed Subtransmission Line

Construction: Like the proposed Viejo Substation, construction of the proposed subtransmission line is an essential element of the overall system improvements necessary to allow SCE to provide reliable service to current and future customers. The project would not induce growth, either directly or indirectly nor would it displace existing housing and/or people necessitating relocation and/or construction of replacement housing elsewhere.

Operation: Operation impacts are the same as describe for the proposed Viejo Substation. The project would not induce substantial population growth either directly or indirectly or displace substantial numbers of existing housing and people necessitating the construction of replacement housing.

1.13.3 Alternative 1B - Subtransmission Line

Construction: Impacts would be the same as described for Alternative 1A.

Operation: Impacts would be the same as described for Alternative 1A.

1.13.4 Alternative 1C - Subtransmission Line

Construction: Impacts would be the same as described for Alternative 1A.

Operation: Impacts would be the same as described for Alternative 1A.

1.13.5 Mitigation

The proposed project as defined would have no impact on population or housing resources. As a result, no mitigation measures are offered.

1.14 Public Services/Utilities

Adverse impacts to the provision of public services or utilities could occur if:

- Acceptable service ratios, response times or other performance objectives for any of the public services (fire protection, police protection, schools, parks or other public facilities) were impacted.
- The project exceeds wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- The project requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- The project requires or results in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- The project needs new or expands entitlements to serve sufficient water supplies.
- The project has a wastewater treatment provider, which serves or may serve the project that does not have adequate capacity to serve the project's demand in addition to the provider's existing commitments.
- The project is served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

1.14.1 Proposed Substation Site

Construction: The proposed project would improve the capacity and reliability of the electric system within SCE's South Orange County service area. The proposed project would not require wastewater disposal; and thus, would not exceed wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board. The project would not require nor result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Underground storm drains are in place and would connect with the existing City of Lake Forest stormwater system. Potable water would be used on site only for fire suppression. Thus, there would no increase in demand for new or expanded entitlements to provide sufficient water supplies. Public services such as police and fire would be provided by the City of Lake Forest.

Operation: Operation of the proposed substation is not anticipated to create higher demand for public services.

1.14.2 Alternative 1A - Proposed Subtransmission Line

Construction: Construction activities could inadvertently contact underground utilities during construction, possibly leading to short term service interruptions. The likelihood of such occurrences is remote, and implementation of standard practices, such as contacting USA before excavation, will reduce potential impacts.

Operation: The project would have no adverse impact on the provision of public services or utilities within the study area.

1.14.3 Alternative 1B - Subtransmission Line

Construction: Construction activities could inadvertently contact underground utilities during construction, possibly leading to short term service interruptions. The likely hood of such occurrences is remote, and implementation of standard practices, such as contacting USA before excavation, will reduce potential impacts. The southern segment would be constructed with urban arterials. Alternative 1B would travel down a portion of Olympiad Road. Construction activities may occur adjacent to the Fire Station 31, located on the north side of Olympiad Road just south of Melinda Road. To avoid obstructions to Fire Department ingress and egress, construction would occur in the lane furthest from the fire station or within the southbound lanes opposite the facility.

Orange County Transit Authority (OCTA) bus routes occur along portions of this alternative line route. During the construction, these routes and their associated bus stops could be temporarily impacted. Mitigation would consist of coordinating with OCTA to temporarily reroute busses or relocate the bus stops.

Operation: No impact to the provision of public services or utilities would occur as a result of project operation.

1.14.4 Alternative 1C - Subtransmission Line

Construction: Construction activities could inadvertently contact underground utilities during construction, possibly leading to sort term service interruptions. The likelihood of such occurrences is remote, and implementation of standard practices, such as contacting USA before excavation, will reduce significant the impacts to a less-than-significant level. Orange County Transit Authority (OCTA) bus routes occur along portions of this alternative line route. Although Trabuco Hills High School is located along Santa Margarita Parkway (the route for Alternative 1C), the main access to the school is not from Santa Margarita Parkway and therefore it is anticipated that construction would not block ingress and egress to the school.

Operation: Once in operation subtransmission line route alternative one would have no impact on the provision of public services or utilities.

1.14.5 Mitigation

The proposed project as defined would have no impact on public services or utilities. As a result, no mitigation measures are offered.

1.15 Recreation

Potential impacts to recreation could occur if:

- The project were to 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.
- The project included recreational facilities or required the construction or expansion of recreation facilities, which might have an adverse physical effect on the environment.

1.15.1 Proposed Substation Site

Construction: The proposed Viejo Substation site is located within a light industrial area. No regional parks or recreational facilities occur on or in proximity to the site. No recreational impacts are anticipated to occur during project construction.

Operation: Operation of the proposed Viejo Substation would have no impact on recreation.

1.15.2 Alternative 1A - Proposed Subtransmission Line

Construction: Construction of the proposed 66 kV subtransmission line would not cause increased use of existing neighborhood and regional parks or other recreational facilities. However, because much of the 220 kV corridor is located within developed recreation areas, construction of the project would have a temporary impact on recreational facilities. Areas would be cleared and/or cordoned off for H-Frame structure installation and TSP removal. For safety reasons, park users would be prohibited from entering work areas. SCE will follow the work safety measures and traffic control plans in the *Work Area Protection and Traffic Control Manual* (California Joint Utility Traffic Control Committee 1996) to ensure public safety during the construction process. The text in this manual conforms to guidelines established by the federal and state Departments of Transportation.

Warning equipment would be placed to provide adequate notice to pedestrians that they are approaching an excavation, obstruction, or other hazard. Warning signs would be removed as soon as the excavation, obstruction, or other hazard is cleared.

Operation: Once in operation the proposed subtransmission line would have no impact on recreation resources.

1.15.3 Alternative 1B - Subtransmission Line

Construction: For the northern segment between the proposed Viejo Substation and Santa Margarita Parkway, construction impacts would be same as described for Alternative 1A. From Santa Margarita Parkway south to the Chiquita Substation, the project would be constructed within urban arterials; and thus, have no impact on recreation resources.

Operation: Once in operation the proposed subtransmission line would have no impact on recreation resources.

1.15.4 Alternative 1C - Subtransmission Line

Construction: The subtransmission line would be constructed within existing urban arterials; and thus, would have no impact on recreational resources.

Operation: Operation of the subtransmission line would have no impact on recreation resources.

1.15.5 Mitigation

Measures to avoid and/or minimize recreation impacts have been included as part of the project design or would be incorporated per regulation and SCE standard construction and operation protocols. Any park areas temporarily impacted by project construction would be revegetated and returned to their original state. As a result, no recreation impacts are anticipated and no mitigation measures are offered.

1.16 Transportation and Circulation

Potential impacts to transportation or circulation could occur if:

- The project generated an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system or conflicts with adopted policies supporting alternative transportation.
- A level of service standard established designated roads or highways were exceeded either individually or cumulatively.
- The project substantially increased hazards to a design feature or incompatible uses.
- The project resulted in inadequate parking capacity and emergency access.

1.16.1 Proposed Substation Site

Construction: During construction of the proposed Viejo Substation, approximately 160-200 truck trips would be generated to haul up to 5,500 cubic yards of material off-site. Assuming clearing, grubbing and soil removal occurred over a period of one month (30 days), approximately 5-7 truck trips per day would be required. Additional trips would be required initially to bring materials and equipment to the site. Workers would generate between 15-20 trips daily.

Construction traffic would be similar in scope to ongoing activities occurring within the Foothill Ranch Planned Community. There is a possibility that vehicular traffic on adjacent arterials may temporarily be slowed due to truck ingress and egress. Because the road network to and from the proposed site is comprised of urban arterials, no impact to traffic circulation is anticipated.

Operation: Operation of the substation would require periodic maintenance visits. These are anticipated to occur 2-3 times per month and would not adversely impact traffic.

1.16.2 Alternative 1A - Proposed Subtransmission Line

Construction: Temporary traffic slow downs may occur as equipment is moved from public roadways onto SCE access roads or when the old TSPs are transported offsite. Because construction would not occur on public roadways, no impact to traffic circulation is anticipated.

Operation: Operation of the 66 kV subtransmission lines would require periodic maintenance visits. These are anticipated to occur 2-3 times per month and would not adversely impact traffic.

1.16.3 Alternative 1B - Subtransmission Line

Construction: For the northern segment between the proposed Viejo Substation and Santa Margarita Parkway, construction impacts would be same as described for Alternative 1A. From Santa Margarita Parkway south to the Chiquita Substation, the project would be constructed within urban arterials. At least one traffic lane would be blocked during construction. In addition to those measures identified to minimize potential impact to pedestrians in recreation areas, the following measures would be implemented:

- Where approved signs or barricades would not provide necessary traffic control, flaggers would be provided. SCE employees and contactors on foot, exposed to the hazard of vehicular traffic, will follow their approved safety programs.

- Flashing amber warning lights would be used on personnel aerial lift equipment. When proper traffic control has been established, the use of amber lights would no longer be required.

Operation: Operation of the subtransmission line would require periodic maintenance visits to inspect vaults and related infrastructure. These are anticipated to occur one time per month and are not anticipated to adversely impact traffic. The underground segment is not anticipated to generate traffic and would have no impact on circulation.

1.16.4 Alternative 1C - Subtransmission Line

Impacts associated with construction of this alternative would be the same as those described for the southern segment of Alternative 1B.

Operation: Once in operation, this alternative would have no impact on transportation or circulation.

1.16.5 Mitigation

Measures to avoid and/or minimize transportation or circulation impacts have been included as part of the project design or would be incorporated per regulation and SCE standard construction and operation protocols. As a result, no transportation or circulation impacts are anticipated and no mitigation measures are deemed necessary.

1.17 Mandatory Findings of Significance

A project will have a significant effect if it will:

- Substantially degrade environmental quality;
- Substantially reduce fish or wildlife habitat;
- Cause a fish or wildlife habitat to drop below self-sustaining levels;
- Threaten to eliminate a plant or animal community;
- Reduce the numbers or range of a rare, threatened, or endangered species;
- Eliminate important examples of the major periods of California history or prehistory;
- Achieve short-term goals to the disadvantage of long-term goals;
- Have possible environmental effects that are individually limited but cumulatively considerable when viewed in connection with past, current, and reasonably anticipated future projects; or,
- Have environmental effects that will directly or indirectly cause substantial adverse effects on human beings.

Prior to mitigation the proposed project and alternatives have the potential to degrade the quality of the environment, reduce wildlife habitat, reduce the numbers or range of a rare, threatened, or endangered species, and eliminate important examples of the major periods of California history or prehistory. Except for Alternative 1C, with the implementation of mitigation as discussed in Sections 5.5.5 and 5.6.5 all significant impacts will be mitigated to less than significant levels. Details for each of the potentially significant effects and the proposed mitigation are described in further detail below:

- Plant Life – Construction of the 220 kV transmission line modifications, 66 kV H-frame structures and TSPs, associated framing and laydown areas, and associated access and stub roads for the proposed Alternative 1A and overhead portion of Alternative 1B is expected to result in the permanent loss of a small amount of a native vegetation community (coastal sage scrub). SCE's position as a Participating Landowner in the Central and Coastal NCCP and implementation of the mitigation measures therein fully mitigates these impacts to coastal sage scrub. Any impacts to plants that are Identified Species are also fully mitigated. Any impacts to Conditionally Covered Species (specifically the foothill mariposa lily) that are detected during surveys conducted in Spring 2003 will be fully mitigated pursuant to the NCCP.
- Animal Life –Construction of the 220 kV transmission line modifications, 66 kV H-frame structures and TSPs, associated framing and laydown areas, and associated access and stub roads is expected to temporarily disrupt wildlife essential behavioral patterns as a result of noise, and to result in the loss of individual listed or otherwise sensitive species (220 kV transmission line modifications, Alternative 1A, Alternative 1B overhead). These impacts to NCCP Identified Species are fully mitigated under the NCCP with the implementation of the NCCP Minimization/Mitigation Measures – Construction Related Impacts.

- Cultural Resources – Construction of Alternative 1C could have a potentially significant effect on archaeological and/or historical resources. Extensive mitigation measures, in addition to monitoring, would be required to reduce the potentially significant impacts to CA-ORA-825 and –826. Extensive mitigation measures may include: standard test pits, testing for depth and extent of the archaeological deposit, or 100% data recovery. Implementation of these measures would not mitigate impacts to less than significant levels.
- Cultural Resources – Construction of Alternative 1A and 1B could have a potentially significant effect on paleontological resources. The proposed mitigation measures will reduce these impacts to below significant levels.

For the reasons described in Chapters 5, 6, 7, 8 and 9, neither the proposed project nor alternative subtransmission line routes have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.

For the reasons described in Chapters 7 and 8, neither the proposed project nor alternative subtransmission line routes have the potential to cause impacts that are individually limited, but cumulatively considerable.

For the reasons discussed in this document, neither the proposed project nor alternative subtransmission line routes have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.