

4.7 Greenhouse Gases

This section describes the environmental and regulatory settings and discusses impacts associated with construction and operation of the South Orange County Reliability Enhancement Project (proposed project) with respect to greenhouse gases (GHGs). During scoping, comments regarding the utilization of sulfur hexafluoride (SF₆) were received and are addressed in this section.

4.7.1 Environmental Setting

According to the U.S. Environmental Protection Agency (EPA), the term *climate change* refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period, decades or longer (EPA 2014a). The term is often used interchangeably with the term *global warming*. Climate change or global warming represents an average increase in the temperature of the atmosphere near the earth's surface and in the troposphere, which can contribute to changes in global climate patterns. The global distribution of temperature increase is varied, and in some locations average temperatures have actually decreased. Climate change has been attributed to a variety of causes, including both natural and human activity (EPA 2014a). Current scientific research indicates that potential effects of climate change include variations in temperature and precipitation, sea-level rise, impacts on biodiversity and habitat, impacts on agriculture and forestry, and human health and social impacts (CNRA 2009).

The proposed project would be located within the eastern side of the South Coast Air Basin. Proposed construction, operation, and maintenance activities would occur within unincorporated areas of the County of Orange, the U.S. Marine Corps Camp Pendleton in the County of San Diego, and the cities of San Juan Capistrano and San Clemente in southern California. Climate and meteorological conditions for these areas are described in the setting section of Section 4.3, "Air Quality."

4.7.1.1 Greenhouse Gases

GHGs allow solar radiation (heat) to pass through the earth's atmosphere but prevent heat from escaping, resulting in atmospheric warming. Certain GHGs occur naturally and help balance the earth's temperature. However, research indicates that since the advent of the Industrial Revolution, human activity has resulted in an elevation of the concentration of some of these gases in the atmosphere. In particular, concentrations of carbon dioxide (CO₂) emitted from the burning of fossil fuels has increased significantly. Much of the carbon in the atmosphere is absorbed by natural "carbon sinks," such as forests or ocean kelp. CO₂ is then emitted back into the atmosphere through natural processes such as animal and plant respiration, and oceanic and geological processes. These natural processes represent "sources." When balanced, the amount of CO₂ emitted from sources and absorbed by carbon sinks is roughly equal; this process is known as the "carbon cycle." As emission levels rise from human activity, however, carbon sinks are becoming overwhelmed and are unable to sequester the increasing amounts of CO₂. Further, other human activity, such as deforestation, can lead to the reduction of sinks. The resulting increase in GHGs in the atmosphere is now considered one of the key causes of global climate change.

In 1988, the World Meteorological Organization and United Nations formed the Intergovernmental Panel on Climate Change (IPCC) as a joint effort to assess the impact of human activity on the global climate. In 1990, the IPCC issued its first assessment report, which helped identify climate change as a serious issue and laid the groundwork for the formation of the United Nations Framework Convention on Climate Change (UNFCCC). The second assessment report, issued by the IPCC in 1995, contributed to the drafting of the Kyoto Protocol to the UNFCCC, adopted in 1997. The Kyoto Protocol asked

1 signatories to the UNFCCC to commit to reducing emissions of four primary GHGs (CO₂, methane
2 [CH₄], nitrous oxide [N₂O], and SF₆) and two secondary groups of GHGs (hydrofluorocarbons [HFCs]
3 and perfluorocarbons [PFCs]) to 5 percent below 1990 emission levels by 2012. At the time of this
4 writing, the United States remains the only signatory to the UNFCCC that has not ratified the Kyoto
5 Protocol. The IPCC last updated its assessment report in 2013 (IPCC 2013).
6

7 In 2006, the State of California enacted the California Global Solutions Warming Act of 2006 (Assembly
8 Bill [AB] 32), requiring a reduction in GHG emissions in the state to 1990 levels by 2020. AB 32 targets
9 the same GHGs identified under the Kyoto Protocol. These gases are described further below.
10

11 **Carbon Dioxide**

12 CO₂ is a colorless, odorless gas generated by both natural and human activity. Natural sources of CO₂
13 include respiration by bacteria, fungus, and animals; decomposition of organic matter; evaporation of
14 ocean water; and geological processes. The primary human-induced sources of CO₂ are combustion of
15 fossil fuels, natural gas, and wood.
16

17 **Methane**

18 CH₄ is a highly flammable gas that is a primary component of natural gas. Similar to CO₂, CH₄ is
19 produced both by natural and human activity. Natural sources of CH₄ include anaerobic decay of organic
20 matter; geological deposits (e.g., natural gas fields); and cattle. Human-induced sources include
21 emissions generated by the decay of organic material in landfills and fermentation of manure and other
22 organic material.
23

24 **Nitrous Oxide**

25 As with CO₂ and CH₄, N₂O is produced by both natural and human activity. Natural sources include
26 microbial action in soil and water, particularly at tropical latitudes. Human-induced sources include
27 emissions from manufacturing facilities, fossil fuel power plants, and motor vehicles.
28

29 **Sulfur Hexafluoride**

30 SF₆ is a colorless, odorless, non-flammable, non-toxic gas used mainly as an insulator (when mixed with
31 other gases, such as argon) in the manufacture of electrical equipment. In particular, SF₆ is commonly
32 used in gas-insulated switchgear and circuit breakers installed in electrical substations.
33

34 **Hydrofluorocarbons**

35 HFCs are human-made compounds consisting of carbon, hydrogen, and fluorine atoms. HFCs were
36 introduced as replacements for atmospheric ozone-depleting chemicals in various industrial and
37 commercial applications. They are used in solvents, refrigerants, firefighting agents, and aerosol sprays.
38

39 **Perfluorocarbons**

40 PFCs are human-made chemicals consisting of carbon and fluorine atoms. As with HFCs, PFCs were
41 introduced as an alternative to atmospheric ozone-depleting chemicals and are used in similar industrial
42 and commercial applications.
43

44 **Global Warming Potential**

45 The effect of a particular GHG on global climate change depends on its global warming potential (GWP).
46 Table 4.7-1 shows the GWP for the six GHGs described above. In the IPCC's fourth assessment report

(AR4), the GWPs for several GHGs were updated based on the latest science. Both the EPA and California Air Resources Board (CARB) have updated national and statewide GHG inventory and reporting guidelines based on the GWPs published in AR4. GWP is determined by a number of factors, including the GHG’s molecular structure, the GHG’s ability to absorb infrared radiation, and the amount of time the GHG can exist in the atmosphere before breaking down. These factors help determine the amount of warming potential a pound of GHG would have relative to a pound of CO₂. For example, a pound of methane has approximately 25 times the warming potential of a pound of CO₂.

Table 4.7-1 Global Warming Potential For Greenhouse Gases

Greenhouse Gas	Global Warming Potential ¹ , 100 Years (relative to CO ₂)
Carbon Dioxide (CO ₂)	1
Methane	25
Nitrous Oxide	298
Perfluorocarbons	7,390-10,300
Hydrofluorocarbons	92-14,800
Sulfur Hexafluoride	22,800

Notes:

¹ Effective January 1, 2014, the U.S. EPA adopted the IPCC AR4 GWPs in 40 Code of Federal Regulations Part 98.

CARB reports that CO₂ represents almost 90 percent of the GHG emissions produced in California (CARB 2011). Because CO₂ is such a prevalent GHG, and the GWP for other GHGs is calculated relative to CO₂, GHGs in the atmosphere are reported in terms of CO₂ equivalency (CO₂e). CO₂e measures GHGs by multiplying the mass of each GHG emitted by its GWP to determine the equivalent amount of CO₂. For example, one pound of CH₄ is equivalent to 25 pounds of CO₂e.

Greenhouse Gas Inventories

The latest GHG inventory from the EPA indicates that the United States emitted 6,702 million metric tons of carbon dioxide equivalency (MTCO₂e) in 2011 (EPA 2014a). The State of California makes up a substantial contribution of those GHG emissions: California produced 458.7 million MTCO₂e in 2012, according to the most recent inventory (CARB 2014a). The state represents the second largest contributor in the United States and the 15th largest emitter of GHGs in the world (CEC 2006; EPA 2013).

Locally, the City of San Clemente Climate Action Plan reports baseline inventory GHG emissions of 620,024 MTCO₂e for 2009, with a contribution of 67 percent from transportation sources and 17 percent from energy and electricity (City of San Clemente 2014). No other local agencies maintain GHG inventories.

4.7.1.2 Potential Effects from Climate Change

In 2008, California Governor Arnold Schwarzenegger issued Executive Order S-13-08, directing the California Natural Resources Agency (CNRA) to determine how state agencies can respond to the challenges posed by climate change. As a result, the CNRA worked with several state agencies to draft the 2009 California Climate Adaptation Strategy. A summary of the potential effects of climate change, as identified in the California Climate Adaptation Strategy, is presented below.

1 **Temperature and Precipitation**

2 GHGs can remain in the atmosphere for decades; thus, the temperature changes over the next 30 to 40
3 years will largely be determined by past emissions. By 2050, temperatures could increase by an
4 additional 1.8 to 5.4 degrees Fahrenheit (CNRA 2009). California would likely continue to have
5 relatively cool, wet winters and dry, hot summers; however, temperature increases could become more
6 severe in summer than winter, and inland areas could experience more pronounced warming than coastal
7 regions. Heat waves could also increase in frequency and intensity. Precipitation patterns are anticipated
8 to change due to increasing temperatures, leading to more rainfall and less snow. This would affect
9 California's drinking water supply, which currently originates mainly as snowmelt runoff. More frequent
10 flood events, due to faster runoff, could also increase stress on state and local infrastructure. Finally,
11 these changes in precipitation could lead to more periods of drought, which could have a negative effect
12 on native ecosystems.

13
14 **Sea-level Rise**

15 Recent studies show that sea levels rose by as much as 7 inches during the 20th century and are
16 anticipated to rise up to 55 inches by the end of the century (CNRA 2009). Furthermore, even if
17 emissions were substantially lowered, research shows that sea levels will continue to rise; thus,
18 adaptation strategies will be an important part of dealing with this impact (CNRA 2009). Sea-level rise
19 could have a negative effect on coastal wetlands and marshes through inundation. This would not only
20 negatively impact these specially adapted habitats but could also damage agricultural activities by way of
21 salt water intrusion into fresh water aquifers. Additionally, loss of these habitats as a storm buffer could
22 increase storm-related impacts such as depleted beaches and property damage.

23
24 **Biodiversity and Habitat**

25 As temperatures and precipitation patterns change, plant and animal species adapted to specific
26 conditions could become threatened. These species may have to shift their geographic range to adapt to
27 the changes; however, if the species are unable to adapt, they may face extinction. As the climate shifts,
28 changes in wildfire patterns may also emerge. While many species in California are adapted to regular
29 fire events, higher temperatures may also result in an increase in the frequency and intensity of fires,
30 which could harm the ability of native plant species to re-germinate between events (CNRA 2009).
31 Overall, climate change could result in very harmful effects on biodiversity. Shifts in species ranges
32 could increase the likelihood of habitat fragmentation, and changes in participation could lead to
33 increased periods of drought, making ecosystems vulnerable to colonization by invasive species.

34
35 **Agriculture and Forestry**

36 The State of California has some of the most productive agricultural regions in the world. Shifts in
37 climate may impact the ability of certain crops (e.g., grapes, other fruits, and nuts) to produce substantial,
38 high-quality yields. Sea-level rise, changes in growing season length, variation in precipitation, and
39 changes in water supply could affect agricultural productivity, which could have an impact on food
40 supplies.

41
42 The range of forest lands in the state will also likely shift in response to climate change. Temperature rise
43 has the potential to make current forest ranges inhospitable, expand insect populations that impact tree
44 mortality, and allow for the colonization of invasive, non-native species.

1 Human Health and Social Impacts

2 Climate change could also result in increased public health risks, including an increase in mortality and
3 morbidity due to heat-related illness and a rise in respiratory illness due to poor air quality caused by
4 higher temperatures. Plant species habitat that shifts due to climate change may also lead to variations in
5 the timing and duration of allergies and the colonization of new habitat by disease vectors such as non-
6 native animals and insects. The elderly, chronically and mentally ill, infants, and the economically
7 disadvantaged will be the most at risk of the negative effects of climate-related illness.
8

9 4.7.2 Regulatory Setting

10 4.7.2.1 Federal

11 According to the EPA, the United States government has established a comprehensive policy to address
12 climate change that includes slowing the growth of emissions; strengthening science, technology, and
13 institutions; and enhancing international cooperation. To implement this policy, the federal government
14 uses voluntary and incentive-based programs to reduce emissions and has established programs to
15 promote climate technology and science (EPA 2014c).
16
17
18

19 Endangerment Finding and Cause or Contribute Finding for Greenhouse Gas

20 In December 2009, the EPA issued two separate findings regarding GHGs under Section 202(a) of the
21 Clean Air Act. The Endangerment Finding states that the current and projected concentrations of the six
22 key GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten public health and welfare.
23 The Cause or Contribute Finding states that the combined emissions of GHGs from new motor vehicles
24 and new motor vehicle engines contribute to GHG pollution.
25

26 Mandatory Reporting of Greenhouse Gases Rule

27 In 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which requires
28 reporting of GHG emissions from large sources and suppliers in the United States. This rule requires
29 suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light-
30 duty sector, and facilities that emit 25,000 metric tons (MT) or more of GHGs per year to submit annual
31 reports to the EPA. The rule is intended to collect accurate and timely emissions data to guide future
32 policy decisions on climate change.
33

34 Final Greenhouse Gas Tailoring Rule

35 The Final GHG Tailoring Rule, established in May 2010, sets thresholds for GHG emissions that define
36 when permits under the New Source Review Prevention of Significant Deterioration and Title V
37 Operating Permit programs are required for new and existing industrial facilities. This final rule tailors
38 the requirements of these Clean Air Act permitting programs to limit which facilities are required to
39 obtain Prevention of Significant Deterioration and Title V permits.
40

41 4.7.2.2 State

42
43 In 2005, Governor Schwarzenegger issued Executive Order S-3-05, establishing a statewide GHG
44 emission reduction target of 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels
45 by 2050. In 2006, Governor Schwarzenegger signed AB 32, the Global Warming Solutions Act, which
46 capped the state's GHG emissions at 1990 levels by 2020. It established the framework for a program of
47 regulatory and market mechanisms designed to achieve quantifiable, cost-effective reductions in GHG
48 emissions (CalEPA 2009). The Climate Change Scoping Plan, approved by CARB in 2008 and updated

1 in 2014 to fulfill AB 32, is California's roadmap for reaching its GHG reduction goals (CARB 2008,
2 2014b). The plan outlines a number of key strategies to reduce GHG emissions. A summary of relevant
3 GHG legislation in California is presented below.
4

5 **Assembly Bill 32 and Executive Order S-3-05**

6 Executive Order S-3-05, issued in 2005, established statewide GHG emission reduction targets of 2000
7 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. In 2006, the Global
8 Warming Solutions Act, AB 32, was enacted with the requirement of reducing the state's GHG emissions
9 to 1990 levels by 2020. Based on 1990 to 2004 inventories of GHG emissions in California, CARB
10 designated a total of 427 million MTCO₂e as the statewide GHG 1990 emissions level and 2020
11 emissions limit. This limit is an aggregated statewide limit, rather than sector- or facility-specific. Taking
12 into account expected growth in population and energy use, the emissions reduction target is estimated to
13 be equivalent to approximately 30 percent below business emissions as usual by the year 2020. AB 32
14 requires that CARB prepare and approve a scoping plan (see below) for achieving the maximum
15 technologically feasible and cost-effective reductions in GHG emissions from sources or categories of
16 sources of GHGs by 2020.
17

18 The 2020 estimates of California's GHG emissions were recently updated to account for future fuel and
19 energy demand, as well as other factors, such as the recent economic recession and anticipated reductions
20 from implemented regulations and the Renewable Portfolio Standard. This updates provided a baseline
21 for the proposed Cap-and-Trade regulation, and 2020 emissions are currently forecast as 507 million
22 MTCO₂e (CARB 2013).
23

24 **Senate Bill 97**

25 The California Senate passed Senate Bill 97 in 2007, requiring the Governor's Office of Planning and
26 Research to prepare, develop, and transmit guidelines for the feasible mitigation of GHG emissions or
27 their effects, including, but not limited to, effects associated with transportation and energy consumption.
28

29 **Executive Order S-13-08**

30 As further discussed in Section 4.7.1.2, Executive Order S-13-08, signed in 2008, directs California to
31 develop methods for adapting to climate change impacts through preparation of a statewide plan. In
32 response to this order, the CNRA developed the California Climate Adaptation Strategy, which was
33 adopted in September 2009.
34

35 **Climate Change Scoping Plan**

36 The Climate Change Scoping Plan, developed by CARB in conjunction with the California Climate
37 Action Team, outlines strategies and measures to reduce GHG emissions in California (CARB 2008,
38 2014). Some of the measures, such as California's Low Carbon Fuel Standard, have become regulations.
39

40 **CEQA Guideline Amendments**

41 In December 2009, pursuant to Senate Bill 97, the CNRA adopted California Environmental Quality Act
42 (CEQA) Guidelines Amendments with new language for addressing the quantification and mitigation of
43 GHG emissions. These amendments became effective in March 2010.
44

45 **Regulation for Reducing Sulfur Hexafluoride Emissions from Gas-Insulated Equipment**

46 California Code of Regulations (CCR) Title 17, Sections 95350 to 95359, establish requirements for
47 reducing SF₆ emissions from gas-insulated equipment. The provisions of this regulation apply to owners

1 of active switchgear equipment. Maximum allowable annual SF₆ emission rates, SF₆ inventory
2 measurement procedures, recordkeeping requirements, and annual SF₆ reporting requirements are
3 specified. Because SF₆ is the most potent GHG (about 24,000 times the GWP of CO₂), even small gas-
4 insulated devices could be responsible for significant GHG emissions. The maximum allowable annual
5 SF₆ emission rate specified is 1.0 percent of the total gas contained in gas-insulated equipment. This rate
6 must be achieved by 2020 and each calendar year thereafter.

7 8 **4.7.2.3 Regional and Local**

9 10 **South Coast Air Quality Management District**

11 The South Coast Air Quality Management District (SCAQMD) is the regional agency with primary
12 responsibility for air quality management in Orange County. To address GHG regulatory developments
13 within the South Coast Air Basin, the SCAQMD issued the *Draft Guidance Document: Interim CEQA*
14 *Greenhouse Gas Significance Threshold* (SCAQMD 2008) and adopted a 10,000 MTCO₂e per year
15 threshold for industrial projects with construction emissions amortized over 30 years and added to
16 operational GHG emissions (SCAQMD 2011).

17 18 **Southern California Association of Governments**

19 Orange County is part of the six-county Southern California Association of Governments (SCAG)
20 region. SCAG's 2008 Regional Comprehensive Plan is an advisory document for local agencies that
21 includes goals, outcomes, and policies to address regional compliance with AB 32 and other federal and
22 state regulations. GHG topics addressed in this plan include traffic and transportation, water, air quality,
23 solid waste, and energy (SCAG 2008). In addition to the Regional Comprehensive Plan, SCAG also
24 adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategies, which
25 provides a plan for meeting regional emissions reduction targets set forth by CARB: 9 percent per capita
26 reduction target by 2020 and 16 percent by 2035, as required by California Government Code Section
27 65080 (b)(2)(J)(ii). These targets for SCAG were accepted by CARB in Executive Order G-12-039
28 (CARB 2012). SCAG Regional GHG goals applicable to the proposed project include the following:

- 29
30 • *Reverse current trends in greenhouse gas emissions to support sustainability goals for energy,*
31 *water supply, agriculture, and other resource areas.*
- 32 • *Reduce the region's greenhouse gas emissions to 1990 levels by 2020.*
- 33 • *Expand green building practices to reduce energy-related emissions from developments to*
34 *increase economic benefits to business and residents.*

35 36 **City of San Juan Capistrano**

37 The City of San Juan Capistrano has not yet adopted a local Climate Action Plan, GHG reduction targets,
38 or specific policies on GHG emissions; however, the City implements the environmental services
39 initiative "Go Green SJC" that focuses on preserving San Juan Capistrano's environment through waste
40 reduction and pollution prevention programs that contribute to GHG emissions reductions, such as solid
41 waste and recycling, air quality, green building, and energy conservation (City of San Juan Capistrano
42 2014).

43 44 **City of San Clemente**

45 The City of San Clemente Climate Action Plan identifies a comprehensive set of targets and related
46 measures that the City will use to reduce GHG emissions, such as alternative transportation, energy
47 efficiency, and waste reduction. The City's goals are to achieve a 15 percent reduction below 2009 levels

1 by 2020 (93,004 MTCO₂e per year) and 38 percent reduction below 2009 levels by 2030 (235,609
2 MTCO₂e per year) (City of San Clemente 2014). This plan includes the following local and state GHG
3 emissions reduction strategies that apply to the proposed project:

- 4 • Implementation of Federal Alternative Fuels Strategies;
- 5 • Implementation of Executive Order S-1-07 (Low Carbon Fuel Standard): reduction of at least 10
6 percent in the carbon intensity of California’s transportation fuels by 2020;
- 7 • Implementation of CARB Heavy Duty Vehicle Regulations; and
- 8 • Compliance with the City Ordinance to achieve a 75 percent waste diversion rate by 2020 and 90
9 percent diversion rate by 2030.

11 **County of San Diego Climate Action Plan**

12 The County of San Diego has developed a Climate Action Plan (CAP) to address the issues of growth
13 and climate change within the unincorporated areas of San Diego County. The CAP establishes a GHG
14 emissions-reduction target of 15 percent below 2005 levels by 2020, which aligns with the
15 recommendation by CARB and the GHG emissions reduction targets set by other local governments. In
16 addition, the County recognizes the goal established by Executive Order S-3-05, which calls for
17 emissions reductions of 80 percent below 1990 levels by 2050. To achieve GHG reduction goals set for
18 2020, the CAP recommends implementation of a range of feasible reduction measures on water
19 conservation, energy-efficiency, land use development, transportation, agriculture, and landscaping and
20 open space (County of San Diego 2012). The GHG reduction measures included in the County of San
21 Diego CAP that would apply to the proposed project are those related to transportation, such as:

- 22 • Increase Ridesharing: 3 percent reduction in vehicle miles traveled (VMT) by using
23 transportation-demand management.
- 24 • Increase Use of Alternative-Fuel Vehicles: 3 percent reduction in VMT by increasing use of
25 electric vehicles.
- 26 • Comply with Pavley Passenger Auto and Light Truck Fuel Efficiency requirements (28.4 percent
27 reduction).
- 28 • Comply with the Low Carbon Fuel Standard (12.0 percent reduction)
- 29 • Comply with the Tire Pressure Program (0.6 percent reduction)
- 30 • Comply with Heavy –Duty Vehicle Aerodynamics requirements (0.7 percent reduction).
- 31
- 32

33 **County of San Diego Guidelines for Determining Significance on Climate Change**

34 On November 2013, the County of San Diego Land Use and Environment Group adopted the Guidelines
35 for Determining Significance and Report Format and Content Requirements for Climate Change. These
36 guidelines establish implementing thresholds for new projects to ensure consistency with the County’s
37 CAP and GHG emission reduction targets (County of San Diego 2013). The implementing thresholds are
38 for *net new emissions*, or net increases in GHG emissions attributable to a specific project relative to an
39 existing baseline. The guidelines include screening criteria for projects that would only increase GHG
40 emissions during construction, such as the proposed modifications in Talega Substation and replacement
41 along transmission line segment relocations for the proposed project within San Diego County. (County
42 of San Diego 2013)

1 Projects are considered with respect to their contribution to the total or cumulative GHG emissions
2 within the County. Projects involving the following construction activities would generally have less-
3 than-cumulative considerable impacts under the San Diego County guidelines:
4

- 5 • Grading and clearing of land involving no more than 1,285 acres of land per year with no soil
6 hauling, and no other aspect of construction or site preparation; and
- 7 • Grading and clearing of land involving no more than 100 acres per year, assuming up to 3,100
8 cubic yards per day of soil hauling.
9

10 In the event that the proposed project exceeds the screening criteria, it should incorporate all applicable
11 CAP measures and estimate emissions applicable to one of the quantified implementing thresholds
12 established in the guidelines. If the projected construction would exceed the criteria, the following
13 threshold to evaluate GHG impacts from the proposed project would apply(County of San Diego 2013):
14

15 *Bright Line Threshold: A proposed project would have a cumulatively considerable contribution*
16 *to climate change impacts if it would result in a net increase of operational greenhouse gas*
17 *emissions, either directly or indirectly, at a level exceeding 2,500 metric tons of CO₂e per year.*
18

19 **4.7.3 Impact Analysis**

20 **4.7.3.1 Methodology and Significance Criteria**

21 To evaluate the potential effects of the GHG emissions generated by the proposed project, emissions
22 were estimated for both construction and operations. The primary sources of long-term direct emissions
23 potential leakage of high GWP gas (SF₆) would be gas-insulated electrical equipment that would be
24 installed and operated at San Juan Capistrano Substation and routine maintenance and use of vehicles.
25 Indirect emissions would be associated with the incremental increases in electricity usage, water and
26 wastewater transport, and solid waste disposal associated with operational-related activities.
27
28
29

30 Direct GHG emissions from equipment and vehicle usage during construction and operation of the
31 proposed project were estimated based on the equipment and vehicle/equipment lists and published
32 emission factors developed by the San Diego Gas & Electric Company (SDG&E, or “the applicant”).
33 Direct GHG emissions of SF₆ from gas-insulated electrical equipment were estimated based on the
34 proposed SF₆ storage capacities of the proposed San Juan Capistrano Substation and conservative
35 leakage rates per year assumptions. Indirect GHG emissions associated with the proposed project
36 operations were estimated to be minimal, since the proposed San Juan Capistrano and Talega substations
37 would be unstaffed, and the proposed transmission and distribution segments would only involve
38 potential solid waste disposal during maintenance and repair activities an annual or as needed basis.
39

40 GHG emission estimates do not account for unforeseeable repairs due to emergency or other causes. In
41 addition, estimates do not include emissions from indirect sources that would be accounted for in a life-
42 cycle analysis. Life-cycle analyses include emissions associated with all stages of development,
43 including, for example, materials manufacturing and distribution.
44

1 Potential impacts from GHG emissions were evaluated according to the following significance criteria.
2 The criteria were defined based on the checklist items presented in Appendix G of the CEQA Guidelines.
3 The proposed project would cause a significant impact from GHG emissions if it would:

- 4
- 5 a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the
- 6 environment; or
- 7 b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the
- 8 emission of GHGs.
- 9

10 According to each County's guidelines, to calculate a project's GHG emissions, the proposed project's
11 construction emissions are amortized over the life of the project (defined by SCAQMD as 30 years) and
12 added to its annual operational emissions. The sum is the value compared to the applicable significance
13 thresholds of 10,000 MTCO_{2e} per year for stationary/industrial projects in the SCAQMD and 2,500
14 MTCO_{2e} per year for projects that exceed the screening criteria in San Diego County (SCAQMD 2008,
15 2011; County of San Diego 2013). Because the quantitative thresholds developed by SCAQMD and San
16 Diego County noted above are based on AB 32 and the California Climate Change Scoping Plan
17 statewide reduction targets, any project that exceeded these thresholds would be in conflict with an
18 applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

20 4.7.3.2 Applicant Proposed Measures

21
22 The applicant has committed to the following measures as part of the design of the proposed project. See
23 Section 2.6, "Applicant Procedures, Plans, Standards, and Proposed Measures," for a complete
24 description of each applicant proposed measure (APM).

- 25
- 26 • **APM GHG-1: Operations Emissions Controls.** SDG&E developed this APM to ensure that
- 27 sulfur hexafluoride is properly managed. SDG&E would implement its existing sulfur
- 28 hexafluoride mitigation strategies during the operation and maintenance of sulfur hexafluoride-
- 29 containing equipment installed as part of the proposed project. These strategies include:
 - 30 • Recording company-wide sulfur hexafluoride purchases, use, and emissions rates to
 - 31 comply with the USEPA's requirements for Electrical Transmission and Distribution
 - 32 Equipment Use (Mandatory Reporting of Greenhouse Gases, 40 CFR Part 98, Subpart DD)
 - 33 and the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from gas-
 - 34 insulated switchgear (Code Regs. Tit. 17, § 95350-95359);
 - 35 • Implementing a sulfur hexafluoride recycling program;
 - 36 • Training employees on the safety and proper handling of sulfur hexafluoride;
 - 37 • Continuing to report GHG emissions with the Climate Registry; and
 - 38 • Implementing SDG&E's sulfur hexafluoride leak detection and repair program. This
 - 39 program includes monthly visual inspections of each GCB, which includes checking
 - 40 pressure levels within the breaker and recording these readings in SDG&E's Substation
 - 41 Management System. During the installation or major overhaul of any GCB, the unit is
 - 42 tested over a 24-hour period to ensure no leaks are present. Minor overhauls of each GCB
 - 43 are conducted every 36 to 40 months to check overall equipment health. This process
 - 44 includes checking gas pressure, moisture ingress, and sulfur hexafluoride decomposition. If
 - 45 the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition,
 - 46 all GCBs are equipped with a gas-monitoring device and alarm that automatically alerts
 - 47 SDG&E's Grid Operations Center. If gas pressure approaches minimum operating levels,

an alarm is immediately reported to SDG&E’s Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E’s leak detection practice includes the following three methodologies:

- Spraying a leak-detection agent onto common leak points—including O rings, gaskets, and fittings;
- Using a field-monitoring device (sniffer) to detect the presence of sulfur hexafluoride gas; and
- Using a laser-detection camera to detect the presence of sulfur hexafluoride gas when the above two methods are unsuccessful in finding a leak.

4.7.3.3 Environmental Impacts

Impact GG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
LESS THAN SIGNIFICANT

During the construction of the proposed project, GHGs, primarily CO₂, would be emitted from engine exhaust of diesel- and gasoline-fueled construction equipment and on-road vehicles (e.g., delivery trucks light-duty vehicles, off-road construction equipment, and heavy duty diesel vehicles, and worker vehicles). The majority of direct project-related GHG emissions would be CO₂, with minor amounts of CH₄ and N₂O associated with the combustion of fuel in mobile equipment.

In total, approximately 18,115 MTCO₂e emissions would be generated from construction of the proposed project (see Table 4.7-2). Approximately half of the total construction emissions would be associated with the construction of San Juan Capistrano Substation, while the remaining sources of emissions would be associated with transmission and distribution lines construction., including roadwork, retaining walls, underground installation, and helicopter use. As detailed in Section 4.3, “Air Quality,” the applicant would implement APM AQ-2 to reduce emissions from fossil-fueled construction equipment, which would also reduce GHGs from combustion. Therefore, the actual total GHG emissions from construction would be below the levels presented in Table 4.7-2. Nonetheless, the unmitigated emissions scenario was used in order to estimate the maximum contribution of MTCO₂e emissions from the construction of the proposed project. Detailed emissions calculations and assumptions are presented in Appendix K.

Table 4. 7-2 Total Greenhouse Gas Emissions from Construction of the Proposed Project

Proposed Project Component	Total Unmitigated Greenhouse Gas Construction Emissions (MTCO ₂ e)		
	South Coast AQMD	San Diego County	Total
Substation Construction	9,460	62	9,522
Transmission Line Construction	7,445	886	8,331
Distribution Line Construction	262	0	262
Total emissions	17,167	948	18,115

Source: SDG&E 2012

Key:

AQMD = Air Quality Management District

MTCO₂e = metric tons of carbon dioxide equivalent

Note:

Emissions are based on the unmitigated emissions scenario for project construction.

1 As discussed in Section 4.7.3.1, to assess the potential impacts of GHG emissions for a project, it is
2 necessary to consider both construction and operational emissions. During operations, the primary source
3 of GHG emissions would be the potential leak of SF₆ from gas-insulated electrical equipment at the
4 proposed San Juan Capistrano. SF₆ would be used to insulate the main electrical substation equipment,
5 such as the 230-kilovolt and 138-kilovolt switchgear. SF₆ is a high GWP gas; one pound of SF₆ has a
6 GWP equivalent of 22,800 pounds of CO₂. The applicant estimates that approximately 21,640 pounds of
7 SF₆ gas would be contained at the proposed San Juan Capistrano Substation. As described in Section
8 2.5.1.1, “Gas-Insulated Equipment,” the applicant would monitor the gas-insulated equipment at the
9 proposed San Juan Capistrano Substation for variations in pressure and conduct routine inventory
10 inspections to keep track of onsite inventories and usage rates. The applicant would be required to report
11 SF₆ inventories and emissions from the use of gas-insulated equipment electrical at San Juan Capistrano
12 substation pursuant the EPA’s requirements for Electrical Transmission and Distribution Equipment Use
13 (40 CFR Part 98, Subpart DD) and the CARB’s Regulation for Reducing Sulfur Hexafluoride Emissions
14 from Gas Insulated Switchgear (17 CCR Sections 95350 to 95359). The applicant would install new gas-
15 insulated equipment certified by the manufacturer to have a SF₆ leak rate of less than 0.5 percent per
16 year, resulting in annual emissions of 108.2 pounds of SF₆ or 1,119 MTCO₂e on an annual basis. The
17 applicant would comply with the maximum annual SF₆ emission rates established by 17 CCR 95352,
18 which, by 2020, would be 1 percent per year for all active gas-insulated equipment. To further reduce
19 impacts, the applicant would implement APM GHG-1, which includes implementing a SF₆ gas recycling
20 program, training employees on the safety and proper handling of SF₆ gas, continuing to report GHG
21 emissions with The Climate Registry, and implementing a SF₆ leak detection and repair program.

22
23 Additionally, the use of equipment and vehicles during routine maintenance and inspection activities
24 would emit CO₂ and CH₄ from engine exhaust of diesel- and gasoline-fueled vehicles. The applicant
25 anticipates that since maintenance and inspection activities would be similar to existing operations, GHG
26 emissions associated with equipment and vehicle use during routine maintenance and inspection
27 activities would not significantly differ from baseline conditions and estimated 2 MTCO₂e per year.

28
29 The total construction emissions of the proposed project, 18,115 MTCO₂e, amortized over 30 years,
30 would be equivalent to 604 MTCO₂e per year.

31
32 As noted in Section 4.7.2.3, the SCAQMD adopted a 10,000 MTCO₂e per year threshold, with
33 construction emissions amortized over 30 years and added to operational GHG emissions for industrial
34 projects (SCAQMD 2011). San Diego County adopted a 2,500 MTCO₂e per year threshold, with
35 construction emissions amortized over 30 years and added to operational GHG emissions for all projects
36 that meet the construction screening criteria (see Section 4.7.2.3). Table 4.7-3 compares the annual GHG
37 emission to SCAQMD and San Diego County GHG thresholds. As shown in Table 2-8, “Temporary and
38 Permanent Land Disturbance Estimates,” the estimated temporary disturbance acreage during
39 construction of the proposed project would be significantly below San Diego County’s construction
40 screening criteria, and therefore, San Diego County’s 2,500 MTCO₂e per year threshold is not applicable
41 to the project even though it is included in Table 4.7-3.

Table 4.7-3 Overall Greenhouse Gas Emissions of the Proposed Project

Emission Source	Annual GHG Emissions (MT of CO ₂ e/year)
Motor Vehicle Use ¹	2
SF ₆ Leakage ²	1,119
Amortized Construction Emissions (30-year period)	604 ³
Annual GHG Operational Emissions	1,725
Exceeds SCAQMD GHG Threshold of 10,000 MTCO₂e/year?	No
Exceeds San Diego County GHG Threshold of 2,500 MTCO₂e/year?⁴	No

Source: SDG&E 2012

Key:

GHG = greenhouse gas

MTCO₂e/year = metric tons of carbon dioxide equivalency per year

SCAQMD = South Coast Air Quality Management District

SF₆ = sulfur hexafluoride

Notes:

- ¹ Direct emissions of CO₂ estimated based on vehicle miles traveled (VMT) per day and 1.1 pounds of CO₂ per mile. Assumptions: 65 VMT per day for transmission line inspection, 62 VMT per day for distribution line inspection, and 60 VMT per day for substation maintenance.
- ² Direct emissions of SF₆ estimated by assuming 0.5 percent leak rate from equipment storing 21,640 pounds of SF₆.
- ³ 18,115 MTCO₂e over 30 years = 604 MTCO₂e/year
- ⁴ San Diego County GHG Threshold is not applicable to the proposed project as the proposed project does not exceed the County's construction screening criteria for GHG analysis.

1
2 Since the estimated long-term GHG emissions associated with the proposed project would not exceed the
3 local thresholds of significance, impacts under this criterion would be less than significant.

4
5 **Impact GG-2: Conflict with any applicable plan, policy or regulation adopted for the**
6 **purpose of reducing the emission of GHGs.**
7 *LESS THAN SIGNIFICANT*

8
9 Because the proposed project's GHG emissions would not exceed quantitative thresholds developed to
10 comply with AB 32 and the California Climate Change Scoping Plan statewide reduction targets, the
11 proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose
12 of reducing GHG emissions. Further, project construction and operation would not conflict with any of
13 the policies or GHG emission reduction measures outlined in the SCAG Regional Comprehensive Plan,
14 or the City of San Clemente Climate Action Plan, as the project proponent would be required to comply
15 with federal, state, and local regulations adopted to achieve GHG reduction goals, such as
16 implementation of fuel economy and low carbon fuel standards for project vehicles, and compliance with
17 the City of San Clemente's applicable waste management requirements.¹

18
19 For the major potential permanent source of GHG during project long-term operations (SF₆), the
20 applicant is required to comply with federal and state regulations for reducing emissions from gas-
21 insulated switchgear (40 CFR Part 98, Subpart DD and 17 CCR Sections 95350 to 95359). To comply
22 with these regulations, the applicant would control SF₆ purchases, use, and emission rates and implement
23 APM GHG-1 during operation and maintenance of the proposed project. The gas insulated equipment
24 would be certified by the manufacturer to comply with the maximum annual SF₆ emission rate
25 requirements established by 17 CCR 95352.

¹ The City of San Clemente establishes the goal to adopt a Waste Diversion Ordinance that would require waste diversion of 75 percent by 2020 and 90 percent by 2030.

1 Construction, operation, and maintenance of each component of the proposed project would comply with
2 all applicable regulations for the reduction of GHG emissions, including federal and state requirements
3 for vehicle emissions and fuel use, waste management, and SF₆ emissions from gas-insulated equipment.
4 Construction, operation, and maintenance of the proposed project would not conflict with a federal, state,
5 regional, or local plan, policy, or regulation for reducing GHG emissions; therefore, impacts under this
6 criterion would be less than significant.

4.8 Hazards and Hazardous Materials

This section describes the environmental and regulatory settings and discusses impacts associated with construction and operation of the South Orange County Reliability Enhancement Project (proposed project) with respect to hazards and hazardous materials. During scoping, the following issues were raised and are addressed in this section: the proposed project’s potential to impact gas, oil, and geothermal wells; potential impacts from the soils and materials found within Marine Corps Base (MCB) Camp Pendleton; fire hazards from the overhead transmission line; electromagnetic fields (EMF); and the need to identify potential locations of hazardous materials prior to and during construction. Impacts related to the gas insulated transformers and sulfur hexafluoride (SF₆) are discussed in Section 4.7, “Greenhouse Gases.” Section 4.15, “Transportation and Traffic,” further discusses transportation hazards, and Section 4.13, “Public Services and Utilities,” further discusses impacts on government facilities, including those related to fire and police protection.

4.8.1 Environmental Setting

Materials and wastes may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode or generate vapors when mixed with water (reactivity). The term *hazardous material* is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment (California Health and Safety Code [HSC] Chapter 6.95, Section 25501(o)). Hazardous materials have the potential to leach into soils, surface water, and groundwater when spilled or released if not properly contained.

4.8.1.1 Hazardous Materials/Wastes Sites

To determine the location of hazardous materials/wastes sites in within 1 mile of the proposed project, San Diego Gas & Electric Company (SDG&E, or the applicant) employed Environmental Data Resources, Inc. (EDR) to conduct a database analysis. This analysis involved database searches from local, state, and federal agencies with varying levels of enforcement related to the generation, storage and handling, transportation, and treatment of wastes, as well as emergency response activities and remediation of contaminated soil and groundwater sites. EDR’s report is provided in Appendix J. This report did not identify any hazardous materials sites within 1,000 feet of the proposed double-circuit 230-kilovolt (kV) transmission line or the substations with a confirmed contamination or release of hazardous substances (EDR 2012).

In addition to EDR’s search, the California Public Utilities Commission (CPUC) searched the State Water Resource Control Board’s Geotracker database, Cease and Desist Orders and Cleanup and Abatement Orders list; California Environmental Protection Agency’s highly hazardous solid waste sites; and the California Department of Toxic Substance Control’s (DTSC’s) EnviroStor database and hazardous waste sites. These sources are often collectively referred to as the “Cortese List,” and are listed in Government Code Section 65962.5. A search of the Cortese List databases found no active Cortese List sites within 1,000 feet of the proposed project (DTSC 2014a,b; CalEPA 2014; SWRCB 2014a,b).

1 Although search results from hazardous waste databases did not identify any hazardous waste sites on or
2 near the proposed project site, hazardous waste investigations performed by the applicant have identified
3 hazardous waste on the project site. The applicant performed the following hazardous waste
4 investigations at the proposed Capistrano Substation:

- 5
- 6 • In 2002, an asbestos and lead-based paint survey of the existing abandoned concrete building
7 located in the lower yard portion of the substation site was conducted.
- 8 • In 2008, an asbestos inspection survey conducted by a Certified Asbestos Consultant for
9 Capistrano Substation, with emphasis on the abandoned concrete building located in the lower
10 yard.
- 11 • In 2009, a soil sample investigation conducted in the lower yard of the Capistrano Substation site
12 and around the perimeter of the upper yard (see Figure 2-3). (SDG&E 2012)
- 13

14 The 2002 lead-based paint survey identified lead-based paint on building materials found within the
15 abandoned concrete building located on the lower yard of the existing Capistrano Substation (SDG&E
16 2012). Table 4.8-1 details the finding of the lead-based paint survey.

17 **Table 4.8-1 Lead-based Paint Survey Results**

Building Location and Type of Material	Concentration of Lead (mg/kg)	Condition of Material Containing Lead ¹
Interior Window	5,323–11,280	Poor
Exterior door and window frames (green paint)	13,920–59,600	Poor
Exterior Stucco (beige paint)	8,468–43,050	Fair to Good

Source: SDG&E 2012

Key:

mg/kg = milligrams per kilogram

Note:

¹ The relative hazard potential from lead-based paint is a function of the condition of the material containing the lead. The worse the condition of the material, the higher the hazard potential.

18
19 The 2002 asbestos survey did not locate any asbestos-containing materials. However, the 2008 asbestos
20 survey identified asbestos-containing materials in building materials found within the abandoned concrete
21 building located on the lower yard of the existing Capistrano Substation site (SDG&E 2012). Table 4.8-2
22 details the findings of the 2008 asbestos survey.

23 **Table 4.8-2 Asbestos Containing Material Survey Results**

Building Location and Type of Material	Type and Concentration of Asbestos	Approximate Amount of Asbestos Containing Material	Condition of Material Containing Asbestos ¹
Roof (gray mastic)	Chrystoline (7%)	10 square feet	Fair
Roof (felts)	Chrystoline (65%)	5,680 square feet	Fair
2 nd Floor (Electric Conduit/Transite)	Presumed (not samples taken)	2 linear feet	Good

Source: SDG&E 2012

Note:

¹ The relative hazard potential from asbestos containing materials is a function of the condition of the material containing the asbestos. The worse the condition of the material, the higher the hazard potential. Intact or sealed asbestos is not harmful unless it becomes damaged and friable. Friable means the material can be easily crushed or pulverized to a powder by hand pressure. Friable materials have a higher potential to release fibers. Asbestos fibers that are released into the air and inhaled can accumulate in the lungs and pose a health risk (CalEPA 2005).

1 The 2009 soil sampling effort found one sample with elevated levels of petroleum hydrocarbons, one
 2 sample with a moderately elevated level of lead, and one sample with an elevated level of chromium
 3 (SDG&E 2012). Table 4.8-3 details the results of the soil sampling at the existing Capistrano Substation
 4 site.
 5

Table 4.8-3 Soil Sampling Results

Contaminant	Sample Location and Depth	Concentration	Waste Classification and Other Restrictions
Total recoverable petroleum hydrocarbons	Former transformer area (lower yard) at 0.5 fbs	3,700 mg/kg	Hazardous Waste <ul style="list-style-type: none"> • Concentration exceeds CHHSL solid of 117 mg/kg • Concentration exceeds EPA Region IX RSLs for TPH of 420 mg/kg
Lead	Former transformer area (lower yard) at 0.5 fbs	200 mg/kg total lead / 33 mg/l soluble lead	Hazardous Waste <ul style="list-style-type: none"> • Concentration is below CHHSL within commercial and industrial soils of 320 mg/kg • Concentration is below USEPA Region IX RSLs for lead content of 400 mg/kg.
Chromium	Existing Capistrano Substation perimeter (upper yard) at 8 fbs	450 mg/kg total chromium(III) ¹	Not Hazardous Waste: <ul style="list-style-type: none"> • Concentration is below CHHSL within commercial and industrial soils of 100,000 mg/kg • Concentration is below USEPA Region IX RSLs for chromium (III) of 1,800,000 mg/kg

Source: SDG&E 2012; OEHHA 2014; EPA 2014

Key:

CHHSL = California Human Health Screening Level

EPA Region IX RSL = United States Environmental Protection Agency Region 9 Regional Screening Levels

fbs = feet below surface

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

TPH = Total petroleum hydrocarbons

Note:

¹ Total Chromium detection (450 mg/kg) is assumed to be Chromium III because follow-up tests for the more toxic Chromium VI was detected below the detection limit of 1 mg/kg. Therefore, the screening levels for Chromium III were used to assess potential risk.

6
 7 Talega Substation is located on land owned by the United States Marine Corps (Marine Corps) within its
 8 Camp Pendleton base. The Navy's Installation Restoration (IR) Program identifies, assesses,
 9 characterizes, and cleans up or controls contamination from past hazardous waste-disposal operations and
 10 hazardous materials spills at United States Navy and Marine Corps installations.

11
 12 There are currently 16 active IR sites in MCB Camp Pendleton's IR Program, all in different phases of the
 13 cleanup process (USMC 2014a). The two closest IR sites to the proposed project are over 3 miles from
 14 Talega Substation (USMC 2014b).

15 16 **4.8.1.2 Schools**

17
 18 Schools are considered potentially vulnerable to hazardous materials releases under the California
 19 Environmental Quality Act (CEQA). Seven schools are located within 0.25 miles of the proposed project,
 20 listed in Table 4.8-4. Section 4.8.3 evaluates potential risks to schools located near hazardous materials
 21 associated with the proposed project.
 22

Table 4.8-4 Schools within 0.25 Miles of the Proposed Project

School	Address	Approximate Distance
Harold Ambuehl Elementary School	28001 San Juan Creek Road, San Juan Capistrano	0.10 mile south of the 12-kV distribution line
Jserra Catholic High School	26351 Junipero Serra Road, San Juan Capistrano	0.21 mile north of Capistrano Substation
Saddleback Valley Christian	26333 Oso Road, San Juan Capistrano	0.25 mile northwest of Capistrano Substation
Junipero Serra High School	31422 Camino Capistrano, San Juan Capistrano	0.25 mile south of Capistrano Substation
Marbella Montessori	31113 Rancho Viejo Road, San Juan Capistrano	0.18 mile southwest of Transmission Line Segment 1b
St. Margaret's Episcopal School	31641 La Novia Avenue, San Juan Capistrano	0.00 mile southeast of the 12-kV distribution line
San Juan Hills High School	29211 Vista Montana, San Juan Capistrano	0.00 mile north of Transmission Line Segment 2
Vista Del Mar Elementary and Middle Schools	1130 Avenida Talega, San Clemente	0.25 mile south of Transmission Line Segment 3
Heritage Christian	190 Avenida La Pata, San Clemente	0.25 mile west of Transmission Line Segment 3
Talega KinderCare	1141 Puerta del Sol, San Clemente	0.02 mile east of Transmission Line Segment 3

Key:
kV = kilovolt

4.8.1.3 Airports and Airstrips

No airports, public or private, are located within 2 miles of the proposed project. There is an airstrip located within MCB Camp Pendleton property, approximately 2.5 miles southeast of Talega Substation. Additionally, there is an airport located within the MCB Camp Pendleton property, approximately 16 miles southeast of Talega Substation. The closest public airport to the proposed project is the John Wayne Airport, which is located approximately 15 miles north of the proposed San Juan Capistrano Substation site.

4.8.1.4 Oil, Gas, and Geothermal Wells

The applicant conducted a search of the Division of Oil, Gas, and Geothermal Resources (DOGGR) Well Finder Database to identify oil, gas, and geothermal wells within 1,000 feet of the proposed project. The results of this search are provided in Table 4.8-5.

Table 4.8-5 Oil, Gas, and Geothermal Wells within 1,000 feet of the Proposed Project

Well Operator "Lease Name" (API No. ¹)	Well Type and Status (Year)	Approximate Distance
Conley & Associates, Inc. "Conley-Estrella" (059-21186)	OG Plugged (1983)	300 feet west of Laydown area on Calle Saluda, San Clemente
George L. Guthrie "M&J Forster" (059-20690)	OG Plugged (1978)	730 feet west of Transmission Pole 28

Source: DOGGR 2014

Key:
API = American Petroleum Institute Well Number
OG = Oil and gas production

Note:
¹ An API Number is a unique, permanent, numeric identifier assigned to each oil and gas well in the United States.

1 **4.8.1.5 Emergency Response**
2

3 Orange County and the cities of San Juan Capistrano and San Clemente have developed and implemented
4 emergency response plans to help the communities prepare for and organize responses to natural and
5 human-caused disasters. Emergency response and evacuation plans that apply to the proposed project area
6 include Orange County’s *Hazard Mitigation Plan* (n.d.), the City of San Juan Capistrano’s *Emergency*
7 *Operation Plan* (2007), and the City of San Clemente’s *Multi-Hazard Emergency Plan* (2003). The
8 content of these plans is discussed further in Section 4.8.2.3. Daily administration of the disaster
9 preparedness and response programs for these areas is handled by the Orange County Fire Authority,
10 Orange County Sheriff’s Department, and trained city and county staff in the respective jurisdictions.
11

12 **4.8.1.6 Fire Hazards**
13

14 The California Department of Forestry and Fire Protection (CAL FIRE) is the state agency responsible for
15 fire protection in State Responsibility Areas (SRAs) of California and also identifies and maps fire risks
16 in SRA’s, Federal Responsibility Areas (FRAs), and Local Responsibility Areas (LRAs). CAL FIRE
17 designates areas as having very high, high, or moderate fire hazards. Fire Hazard Severity Zone
18 designations are based on fuels, terrain, fire history, and weather of the area (CAL FIRE 2009). Figure
19 4.8-1 shows areas designated as Very High Fire Hazard Severity Zones along the proposed project route.
20

21 **4.8.1.7 Electromagnetic Fields**
22

23 EMFs occur both naturally and as a result of human activity across a broad electrical spectrum. Naturally
24 occurring EMFs are caused by the weather and the earth’s geomagnetic field. The fields caused by human
25 activity result from technological application of the electromagnetic spectrum for uses such as
26 communications, appliances, and the generation, transmission, and local distribution of electricity.
27

28 After several decades of study regarding potential public health and safety risks associated with EMFs
29 from power lines, research results remain inconclusive. In 1993, the CPUC implemented decision D.93
30 11-013, which requires utilities to use “low-cost or no-cost” EMF reduction measures for EMFs
31 associated with electrical facilities requiring certification under CPUC General Order (GO) 131-D. The
32 decision directed utilities to use a 4 percent benchmark for low-cost measures. The applicant included a
33 Field Management Plan as part of its applications for the proposed project that describes the EMF
34 reduction measures that would be part of the proposed project (Appendix H). This decision also
35 implemented a number of EMF measurement, research, and education programs. The CPUC did not
36 adopt any specific numerical limits or regulation of EMF levels related to electric power facilities.
37

38 The CPUC’s January 27, 2006, decision (D.06-01-042) affirmed the 1993 decision on the low-cost/no-
39 cost policy to mitigate EMF exposure for new utility transmission and substation projects. Additionally,
40 the 2006 decision directs the CPUC’s Energy Division to pursue and review all available studies
41 regarding EMFs and to review scientific information and report on new findings. The CPUC has been
42 unable to determine whether there is a significant scientifically verifiable relationship between EMF
43 exposure and negative health consequences, and no change to the CPUC EMF policy has been made to
44 date. The CPUC will reconsider its EMF policies and open a new rulemaking, as necessary, if new
45 findings indicate negative EMF health impacts.
46

47 At present, the CPUC does not consider EMFs, in the context of CEQA, to be an environmental impact
48 because there is no agreement among scientists that EMFs create a potential health risk and because
49 CEQA does not define or adopt standards for defining any potential risk from EMFs. Therefore, EMFs
50 are not addressed in the Environmental Impacts and Mitigation Measures section of this resource section.

1 For further information about EMFs and CPUC guidelines, refer to
2 <http://www.cpuc.ca.gov/Environment/emf/emfopen.htm>.
3 <http://www.epuc.ca.gov/PUC/energy/Environment/ElectroMagnetic+Fields>.

4.8.2 Regulatory Setting

4.8.2.1 Federal

Comprehensive Environmental Response, Compensation, and Liability Act

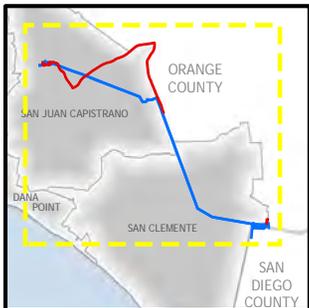
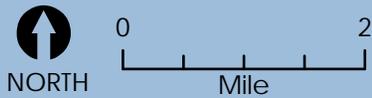
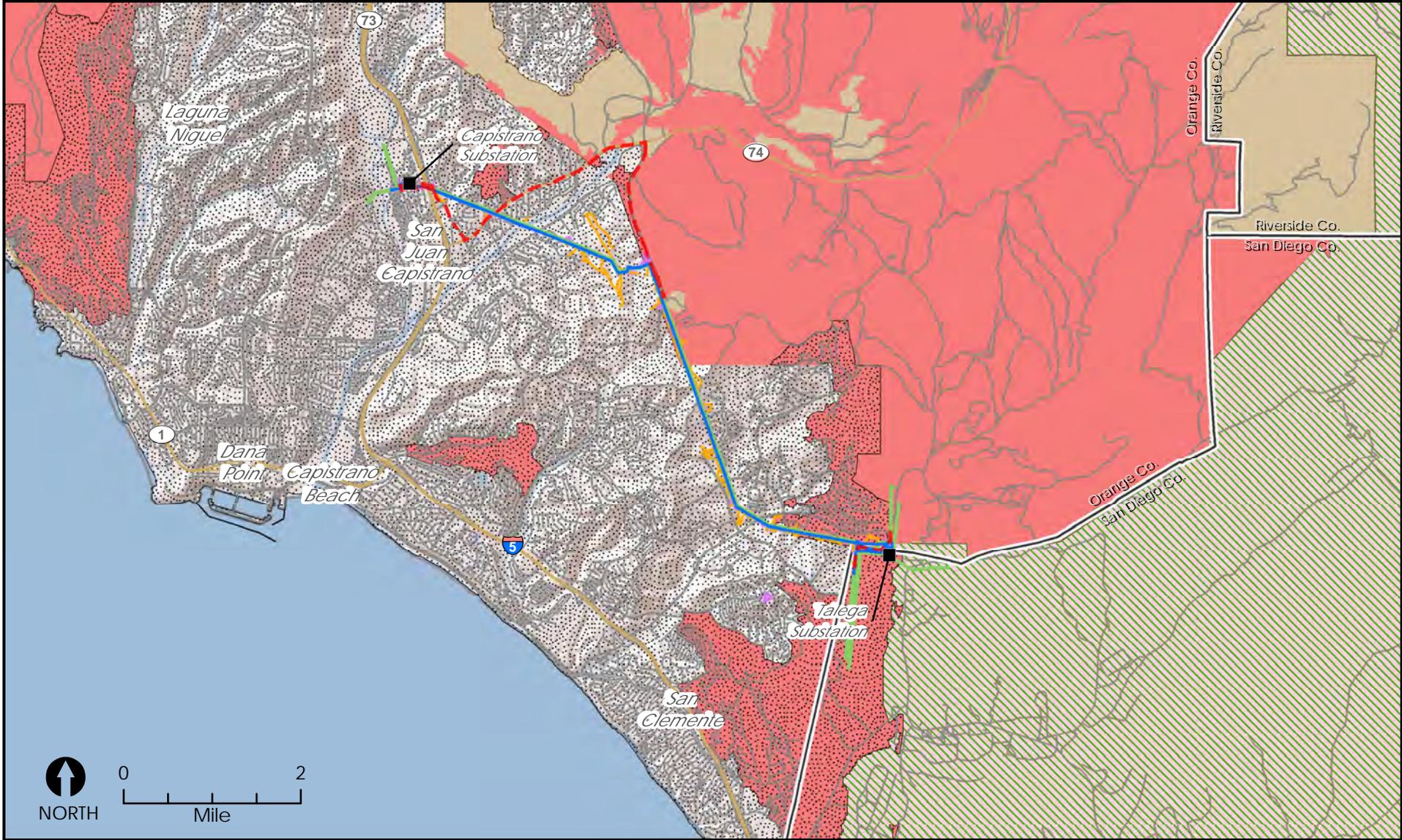
10 The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known
11 as Superfund, outlines regulations for the cleanup of toxic waste sites nationwide. In 1986, Superfund was
12 amended by the Superfund Amendment and Reauthorization Act (SARA) Title III, also known as the
13 Emergency Planning and Community Right-to-Know Act. SARA Title III, along with the Clean Air Act
14 of 1990, established a nationwide emergency planning and response program and imposed reporting
15 requirements for businesses that store, handle, or produce significant quantities of extremely hazardous
16 materials. These acts require states to implement a comprehensive system to inform local agencies and the
17 public when a significant quantity of such material is stored or handled at a facility. There are no known
18 CERCLA sites in the immediate vicinity of the proposed project area.

Resource Conservation and Recovery Act

21 The Resource Conservation and Recovery Act (RCRA) regulates hazardous waste from the time that
22 waste is generated through to its management, storage, transport, treatment, and final disposal. The
23 United States Environmental Protection Agency (EPA) has authorized the California DTSC to administer
24 the State's RCRA programs. A RCRA hazardous waste exhibits at least one of four characteristics:
25 ignitability, corrosivity, reactivity, or toxicity. To keep track of hazardous waste activities, treatment,
26 storage, and disposal facility owners and operators must keep certain records and submit reports to the
27 EPA at regular intervals. All facilities that generate, transport, recycle, treat, store, or dispose of
28 hazardous waste are required to notify the EPA (or its state agency) of their hazardous waste activities.
29 An EPA Identification Number must be obtained unless the waste has been excluded from regulation or
30 exempted. National Biennial RCRA Hazardous Waste Reports Sections 3002 and 3004 of RCRA require
31 that the EPA collect information pertaining to hazardous waste management from hazardous waste
32 generators and hazardous waste treatment, storage, and disposal facilities every two years. Used
33 hazardous waste from construction and operation of the proposed project are regulated under this act.

Hazardous Materials Transportation Act

36 The primary objective of the Hazardous Materials Transportation Act is to provide adequate protection
37 against risks to life and property inherent in the transportation of hazardous materials in commerce. This
38 act empowers the United States Department of Transportation to regulate the transportation of hazardous
39 materials, including explosives, by rail, aircraft, vessel, or public highway. Hazardous materials
40 regulations are subdivided by function into the following four areas within 49 Code of Federal
41 Regulations (CFR) Parts 101, 106, 107, 171 to 177, and 178 to 180: Procedures and/or Policies; Material
42 Designations; Packaging Requirements; and Operational Rules. The transportation of all hazardous
43 materials to and from the proposed project area during construction and operation would be regulated by
44 this act.



- Proposed transmission line
- Existing transmission line
- Access road
- Distribution Line
- Staging areas, stringing sites, work areas, and helicopter fly yards
- Roads
- Local road
- County Boundary

- Fire Hazard Severity Zones
- Very High
- Federal Responsibility Area
- Local Responsibility Area
- State Responsibility Area

Sources: CalFire 2011

Figure 4.8-1

Fire Hazard Severity Zones

South Orange County Reliability Enhancement Project

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1 **Oil Pollution Prevention**

2 The objective of the oil pollution prevention regulation stated in 40 CFR Part 112 is to prevent oil
3 discharges from reaching navigable waters of the United States or adjoining shorelines. This regulation
4 was also written to ensure effective response to oil discharge. The regulation further requires that
5 proactive measures be used to respond to oil discharge. It contains two major types of requirements:
6 prevention requirements (the Spill Prevention, Control, and Countermeasure [SPCC] rule) and Facility
7 Response Plan requirements.
8

9 SPCC plans are required for facilities that are non-transportation-related, have an aggregate aboveground
10 storage capacity greater than 1,320 gallons or a completely buried storage capacity greater than 42,000
11 gallons, and have a reasonable expectation of a discharge into or upon navigable waters of the United
12 States. An SPCC plan would be required for the operation of the proposed San Juan Capistrano
13 Substation and Talega Substation because these facilities would store more than 1,320 gallons of
14 transformer oil in the transformers, which could reasonably discharge into navigable waters (40 CFR
15 Parts 112.1–112.7). Twelve drainages were identified that may be subject to the jurisdiction of the United
16 States Army Corps of Engineers, California Department of Fish and Wildlife, and San Diego Regional
17 Water Quality Control Board during wetland delineation surveys (SDG&E 2012). Jurisdictional waters
18 and regulatory requirements are further discussed in Section 4.4, “Biological Resources.” The Orange
19 County Environmental Health Division is responsible for administering SPCC plans in Orange County.
20 The applicant has existing SPCC plans for Capistrano and Talega substations.
21

22 **Transformer Oil Transport and Recycling**

23 Title 49 CFR Part 130 applies to the transport of transformer oil (mineral oil) when shipped in containers
24 of 3,500 gallons or more. Mineral oil would be transported in volumes over 3,500 gallons for the
25 proposed project. According to 49 CFR Part 130, containers used for the transportation of oil subject to
26 this regulation must be designed, constructed, maintained, closed, and loaded such that under conditions
27 normally incident to transportation, there will be no release of oil to the environment. In addition, a
28 response plan must be developed pursuant to 49 CFR Part 130 requirements. Standards for the recycling
29 of used transformer oil are established in 40 CFR Part 279.
30

31 **Occupational Safety and Health Administration**

32 The Occupational Safety and Health Administration (OSHA) administers Occupational Safety and Health
33 Standards (CFR Title 29) that establish regulations for safety in the workplace and construction safety,
34 including safety regarding the use of helicopters for construction.
35

36 OSHA standards require implementation of a Hazard Communication Plan to identify and inventory all
37 hazardous materials and material safety data sheets. OSHA’s standards also require employee training in
38 safe handling of hazardous materials. OSHA standards are relevant to the proposed project because its
39 construction and operation would involve the use of heavy-duty equipment, helicopters, and heavy-duty
40 and lighter vehicles that may pose health and safety risks to workers. In addition, workers would handle
41 and use chemical substances.
42

43 **4.8.2.2 State**

44 **Hazardous Materials and Waste**

46 California Health and Safety Code (HSC) Section 25501 defines the term *hazardous material* as any
47 material that, because of quantity, concentration, or physical or chemical characteristics, poses a
48 significant present or potential hazard to human health and safety or to the environment. Hazardous
49 materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a

1 handler or the administering agency has a reasonable basis for believing would be injurious to the health
2 and safety of persons or harmful to the environment if released into the workplace or the environment.
3 Title 8, Section 339 of the California Code of Regulations (CCR) lists substances identified as *hazardous*
4 *substances* for which employers must provide material safety data sheets to employees.

5
6 CCR Title 22, Section 66261.1 identifies those wastes which are subject to regulation as hazardous wastes
7 and that are subject to the notification requirements pursuant to the California HSC. The HSC defines a
8 waste as hazardous if it has any of the following characteristics: ignitability, corrosivity, reactivity, and
9 toxicity. It also provides lists of hazardous wastes listed pursuant to RCRA, non-RCRA hazardous wastes,
10 hazardous wastes from specific sources, extremely hazardous wastes, hazardous wastes of concern, and
11 special wastes. The EPA has authorized the California DTSC to administer the RCRA program in
12 California.

13
14 Under federal regulations, transformer oil, under most intended uses, would become used oil, the
15 recycling of which is regulated by 40 CFR 279. Use resulting in chemical or physical change or
16 contamination may also subject it to regulation as hazardous waste, which is also managed under 40 CFR
17 279. In California, however, all used oil is managed as hazardous waste until tests have shown that it is
18 not hazardous (HSC Section 25250.4). Requirements for the transport of hazardous waste, including
19 driver training, are established in CCR Title 26.

20 21 **Extremely Hazardous Substances**

22 The CEQA Guidelines identify “extremely hazardous substances” as those defined by Section
23 25532(2)(g) of the California HSC. These include the substances listed in Appendix A of Part 355
24 (commencing with Section 355.10) of 40 CFR Chapter I, Subchapter J that provides a list of extremely
25 hazardous substances and their threshold planning quantities. The CEQA Guidelines define “hazardous
26 air emissions” as emissions of air contaminants identified as toxic by the California Air Resources Board
27 (CARB) or the designated air pollution control officer. These include substances identified in Section
28 44321(a to f) of the California HSC.

29 30 **Treated Wood Waste**

31 Section 25150.7 of the California HSC outlines procedures and regulations for the management and
32 disposal of treated wood waste. Wood waste, including the type of wood utility poles that would be
33 disposed of as part of the proposed project, may be treated with pesticides and other chemicals to protect
34 the wood. Because the chemical treatments could leach into water supplies when disposed of, Section
35 25150.7 was developed to restrict how and where treated wood waste can be disposed of.

36 37 **Certified Unified Program Agency and Hazardous Materials Plans**

38 Administration of the Certified Unified Program Agency (CUPA) is authorized by the California HSC
39 (Chapter 6.11, Sections 25404-25404.8) and CCR Title 27, Division 1, Subdivision 4, Chapter 1, Sections
40 15100–15620. This program is implemented at the local level by government agencies certified by the
41 secretary of the California Environmental Protection Agency. The Orange County Environmental Health
42 Division is the CUPA for Orange County. The CUPA coordinates the regulation of hazardous materials
43 and hazardous wastes in Orange County through the following six programs:

- 44
- 45 • Hazardous Materials Disclosure,
 - 46 • Business Emergency Plan,
 - 47 • Hazardous Waste,
 - 48 • Underground Storage Tank,

- Aboveground Petroleum Storage Tank, and
- California Accidental Release Prevention.

The Office of the State Fire Marshal is responsible for ensuring implementation of the Hazardous Materials Management Plans and Hazardous Materials Inventory Statement Programs (California HSC Section 25404 and CCR Sections 15100, 15160, and 15330), which are overseen by the CUPA.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined under the Business Plan Act as raw or unused materials that are part of a process or manufacturing step. Health concerns pertaining to the release of hazardous materials are similar to those relating to hazardous waste.

California HSC Section 25503.5 requires a business plan for emergency response for facilities that store hazardous materials in excess of 55 gallons (liquid), 500 pounds (solid), or 200 cubic feet (gas). Facilities that handle more than these indicated quantities of hazardous materials must submit a Hazardous Materials Business Plan (HMBP) to the CUPA, prior to project construction. The existing Talega Substation and the proposed San Juan Capistrano Substation would store 85,200 and 65,400 gallons of transformer oil, respectively, would be required to ~~implement an~~ update the facilities' existing HMBPs for construction and operations. In California, all used oil is managed as hazardous waste until tests have shown it is not hazardous (HSC Section 25250.4). The applicant would be required to submit an updated HMBPs to the CUPA for project ~~construction and~~ operation. In general, HMBPs describe and identify storage areas for hazardous materials and waste; describe appropriate handling, storage, and disposal techniques; and include measures for avoiding and addressing spills pursuant to California HSC Section 25504.

Hazardous Waste Control Act

The Hazardous Waste Control Act established the state hazardous waste management program, which is similar to, but more stringent than, RCRA program requirements. CCR Title 26 describes the requirements for the proper management of hazardous waste under the Hazardous Waste Control Act, including the following:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for the identification, packaging, and disposal of such waste. Under the Hazardous Waste Control Act, and Title 26, the generator of hazardous waste must document waste from generation to transporter to disposal. Copies of this documentation must be filed with the California DTSC.

1 The California DTSC operates programs to protect California from exposure to hazardous wastes through
2 the following practices and procedures:

- 3
- 4 • Handling of the aftermath of improper hazardous waste management by overseeing site clean-up;
- 5 • Prevention of the release of hazardous waste by ensuring that those who generate, handle,
6 transport, store, and dispose of wastes do so properly;
- 7 • Enforcement against those who fail to appropriately management hazardous wastes;
- 8 • Exploration and promotion of measure to prevent pollution and encourage reuse and recycling;
- 9 • Evaluation of site-specific soil, water, and air samples and development of new analytical
10 methods;
- 11 • Practice in other environmental sciences, including toxicology, risk assessment, and technology
12 development; and
- 13 • Involvement of the public in the California DTSC's decision-making.

14
15 Hazardous wastes that may be encountered or generated during the construction and operation of the
16 proposed project would be subject to the requirements of the Hazardous Waste Control Act.

17 **Emergency Services Act**

18
19 Under the Emergency Services Act, the State of California developed an emergency response plan to
20 coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents
21 involving hazardous material or hazardous waste is an important segment of the plan administered by the
22 California Emergency Management Agency. The California Emergency Management Agency coordinates
23 the response of agencies, including the California Environmental Protection Agency, California
24 Department of Transportation, California Highway Patrol, Regional Water Quality Control Boards, air
25 quality management districts, and county disaster response offices.

26 **Government Code Section 65962.5: Cortese List**

27
28 The Cortese List includes all hazardous waste facilities subject to corrective action; land designated as
29 hazardous waste property or border zone property; information received from the California DTSC about
30 hazardous waste disposals on public land; sites listed pursuant to the California HSC Section 25356
31 (removal and remedial action sites); and sites included in the Abandoned Site Assessment Program.
32 Pursuant to Government Code Section 65962.5, the California DTSC compiles and updates the Cortese
33 List as appropriate, but at least annually. Refer to Section 4.8.1.1 for a discussion of the Cortese List
34 database search results for the proposed project.

35 **California Fire Code and Public Resources Code**

36
37 The California Fire Code is Part 9 of CCR Title 24 (the California Building Standards Code). The
38 California Fire Code incorporates, by adoption, the International Code Council's International Fire Code
39 with amendments specific to California. All facilities constructed as part of the proposed project must
40 comply with the fire codes established by Title 24 and as amended by local jurisdictions. Title 24 is
41 further discussed in Section 4.13, "Public Services and Utilities."

42 **California Public Resources Code**

43
44 The California Public Resources Code (PRC) includes fire safety regulations that restrict the use of
45 equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction
46 equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-

1 powered tools in fire hazard areas; and specify fire suppression equipment that must be provided onsite
2 for various types of work in fire prone areas. The PRC requirements apply to construction activities in
3 areas designated by CAL FIRE as SRAs with substantial wildland fire risk (California PRC Section
4 4125). The proposed project would be located on land designated by CAL FIRE as a Very High Fire
5 Hazard Severity Zone (Figure 4.8-1).

6
7 California PRC Sections 4292 and 4293 address vegetation management in transmission (and
8 subtransmission) line corridors. Within mountainous land, forest-covered land, brush-covered land, or
9 grass-covered land, owners and managers of electrical transmission lines are required to maintain a
10 firebreak consisting of a clearing of not less than 10 feet in each horizontal direction from the outer
11 circumference of structures that support electrical infrastructure that could be a source of ignitions and
12 therefore present a fire risk, including switches, fuses, transformers, and lightning arresters. California
13 PRC Section 4293 requires the felling, cutting, or trimming of dead, rotten, decayed, diseased, or
14 otherwise weakened trees that may affect or fall on an electric line. Sections 4291 through 4299 also
15 specify requirements for maintaining clearance around other types of structures and buildings to reduce
16 fire risk that are applicable to the proposed project.

17 **California Occupational Health and Safety Administration**

18
19 The California Occupational Health and Safety Administration (CalOSHA) is responsible for the
20 development and enforcement of workplace safety standards and ensuring worker safety in the handling
21 and use of hazardous materials. CalOSHA requires businesses to prepare Injury and Illness Prevention
22 Plans and Chemical Hygiene Plans. Its Hazards Communication Standard requires that workers be
23 informed of the hazards associated with the materials they handle. Manufacturers are required to label
24 containers, provide material safety data sheets in the workplace, and provide worker training.

25
26 The employer is required to monitor worker exposure to listed hazardous substances and notify workers
27 of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training,
28 availability of safety equipment, accident-prevention programs, and hazardous substance exposure
29 warnings. Similar to the federal OSHA, CalOSHA contains requirements to prevent worker exposure to
30 certain types of hazardous substances in the work place, such as asbestos and lead. Specifically, exposure
31 of construction workers to lead is controlled by the Lead Standard and the exposure of workers to
32 asbestos containing materials is controlled by the asbestos Construction Standard.

33 **Division of Oil, Gas, and Geothermal Resources**

34
35 The responsibilities mandated to the Division of Oil, Gas, and Geothermal Resources (DOGGR) are
36 detailed in Section 3000 et seq. of the PRC and Title 14, Chapter 4 of the CCR. DOGGR supervises the
37 drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and
38 geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground
39 and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs.
40 Division requirements encourage wise development of California's oil, gas, and geothermal resources
41 while protecting the environment. California PRC Section 3208.1 authorizes DOGGR to order the
42 reabandonment of any previously plugged and abandoned wells when construction of any structure over
43 in the proximity of the well could result in a hazard. Oil, gas, and geothermal wells in the vicinity of the
44 proposed project area are identified in Table 4.8-5.

45 **Underground Service Alert (DigAlert)**

46
47 California Government Code 4216 et seq. defines mandatory notification procedures for subsurface
48 excavations and installations. Pursuant to Section 4216 et seq., the applicant must contact the
49 Underground Service Alert of Southern California, also known as DigAlert, at least two working days but

1 no more than 14 days prior to conducting excavation activities for each component of the proposed
2 project (DigAlert 2014).

3
4 **CPUC General Order 95: Rules for Overhead Electric Line Construction**

5 GO 95 regulates the design, construction, operation, and maintenance of overhead electric lines in
6 California. This order includes safety standards for overhead electric lines, including minimum conductor
7 ground clearance, electric line inspection requirements, and vegetation clearance requirements. Rule 35
8 (Tree Trimming) defines minimum vegetation clearances around power lines and requires 10 feet of
9 radial clearances for any conductor of a line operating at more than 110,000 volts and fewer than 300,000
10 volts. This rule also requires that utility providers remove dead, rotten, and diseased trees that overhang or
11 lean toward a span of an electric line. Rule 31.2 (Inspection of Lines) requires that lines be inspected
12 frequently to ensure that they are in good condition and that lines temporarily out of service be inspected
13 and maintained to prevent a hazard. This order applies to the proposed 230-kV transmission line.

14
15 **CPUC General Order 128: Rules for Construction of Underground Electric Supply and
16 Communication Systems**

17 GO 128 establishes requirements for the construction, operation, and maintenance of all underground
18 electric supply and communications systems under CPUC jurisdiction. Requirements are established to
19 ensure safe design and operation of underground electrical facilities, including design and inspection
20 criteria, to reduce the risk of fire. GO 128 is applicable to the proposed underground 115-kV and fiber
21 optic components.

22
23 **CPUC General Order 165: Inspection Requirements for Electric Distribution and
24 Transmission Facilities**

25 GO 165 establishes requirements for electric distribution and transmission facilities (excluding facilities
26 contained in a substation) regarding inspections to ensure safe and high-quality electrical service. This
27 order establishes a minimum period between inspections and record-keeping requirements. GO 165
28 applies to the proposed 230-kV transmission line.

29
30 **CPUC General Order 166: Standards for Operation, Reliability, and Safety during
31 Emergencies and Disasters**

32 GO 166 applies to all electric utilities subject to the jurisdiction of the CPUC, and addresses electric
33 service reliability and safety. The purpose of the order is to ensure that jurisdictional electric utilities are
34 prepared for emergencies and disasters in order to minimize damage and inconvenience to the public that
35 may occur as a result of electric system failures, major outages, or hazards posed by damage to electric
36 distribution facilities. Investigations as required by this order are conducted following every major
37 outage, pursuant to and consistent with Public Utilities Code Section 364(c) and Commission policy. This
38 order applies to the proposed 230-kV transmission line.

39
40 GO 166 was revised to require investor-owned electric utilities in Southern California, such as SDG&E,
41 to prepare and submit plans to prevent power-line fires during extreme weather events. SDG&E
42 submitted a Fire Management Plan within an Advice Letter to the CPUC that is applicable to operation,
43 design, construction, inspection, and maintenance of the applicant's overhead lines and structures
44 (SDG&E 2012). The CPUC is anticipated to issue a Phase 3 decision for the Electric Safety Order
45 Instituting Rulemaking that will reflect input from CAL FIRE. The third phase of the CPUC proceeding
46 will address the establishment of:

- 47
48
 - Standards for wood structures and materials that will allow utilities to reliably obtain prescribed
49 safety factors enforceable by the CPUC;

- Modern materials and practices, with the goal of improving fire safety; and
- Fire safety standards for the design and construction of electrical infrastructure in areas of high fire threat.

In addition, the Phase 3 decision will address whether and how proposed fire safety standards should apply to existing facilities in high fire threat districts, as well as the development of a plan for reporting to the CPUC's Consumer Safety and Protection Division.

4.8.2.3 Regional and Local

Regional Water Quality Control Board and Stormwater Pollution Prevention Plans

Under the National Pollutant Discharge Elimination System (NPDES), California's Regional Water Quality Control Boards requires a Construction Activities Storm Water General Permit (Order 2009-0009-DWQ) for storm water discharges associated with any construction activity including clearing, grading, excavation reconstruction, and dredge and fill activities that results in the disturbance of at least one acre of total land area. Since the proposed project would disturb more than 1 acre, this permit would be required, along with a Stormwater Pollution Prevention Plan (SWPPP). SWPPPs require the use of site-specific best management practices during construction to reduce the potential for erosion and sedimentation and for vehicle and equipment fueling and maintenance, material storage, spill prevention, and waste management. In Orange County, permits are administered by the San Diego Regional Water Quality Control Board. The NPDES, federal Clean Water Act, and California Water Quality Act are further described in Section 4.9, "Hydrology and Water Quality."

Orange County General Plan

The Safety Element of the Orange County General Plan identifies goals and objectives to address public safety issues, including hazardous materials, aircraft environment, and fire. The following objectives and policies are applicable to the proposed project:

- **Public Safety Component Objective 1.1:** *To identify public safety hazards and determine the relative threat to people and property in Orange County.*
- **Public Safety Component Objective 2.2:** *To encourage the development and utilization of technologies that minimize the effects of public safety hazards.*
- **Public Safety Component Objective 3.1:** *To provide information, training, and assistance to reduce loss of life and injury and to protect private and public property from public safety dangers.*
- **Fire Component Policy 9:** *To encourage improvement of fire defense systems in hazardous areas.*
- **Hazardous Materials Component Policy 5:** *To encourage improvement of fire defense systems in hazardous areas.*
- **Natural Hazards Component Policy 1.1:** *To identify natural hazards and determine the relative threat to people and property in Orange County.*
- **Natural Hazards Component Policy 2.2:** *To support the development and utilization of technologies which minimize the effects of natural hazards. (Orange County 2011)*

County of Orange and Orange County Fire Authority Hazard Mitigation Plan

The Hazard Mitigation Plan provides information to assist Orange County residents, public and private sector organizations, and others interested in participating in planning for natural hazards. The plan includes a risk assessment, which identifies hazards and areas vulnerable to hazards (Orange County n.d.). This plan does not have jurisdiction over the proposed project; however, the proposed project could impact the implementation of this plan, as further discussed in Section 4.8.3.3.

City of San Juan Capistrano General Plan

The City of San Juan Capistrano is subject to several types of public safety hazards. The Safety Element of the City of San Juan Capistrano General Plan was prepared to protect existing and planned land uses from public safety hazards. The following policies are applicable to the proposed project:

- **Policy 1.3:** *Reduce the risk of wildfire hazards by requiring fire retardant landscaping and project design for development located in areas of high wildfire risk.*
- **Policy 1.4:** *Reduce the risk of fire to the community by coordinating with the Orange County Fire Authority.*
- **Policy 2.1:** *Work with responsible federal, state, and county agencies to decrease air pollution emissions occurring within the air basin to reduce the risk posed by air pollution*
- **Policy 2.3:** *Cooperate with responsible federal, state, and county agencies to minimize the risk to the community from the use and transportation of hazardous materials through the City. (City of San Juan Capistrano 1999)*

City of San Juan Capistrano Emergency Operation Plan

The City of San Juan Capistrano's planned response to emergencies associated with natural disasters and technological incidents is addressed in its Emergency Operation Plan (2007). This plan describes operational concepts, lists components of the City's emergency management organization within the Standardized Emergency Management System (SEMS), and outlines the overall responsibilities of the federal, state and county entities. This plan does not have jurisdiction over the proposed project; however, the proposed project could impact the implementation of the City's designated evacuation routes, which are located at northbound Interstate 5 (I-5), westbound State Route 74 and Camino Capistrano (City of San Juan Capistrano 2007), as further discussed in Section 4.8.3.3.

City of San Clemente General Plan

San Clemente is susceptible to a variety of natural and human-made safety hazards, including contaminated soil hazards and wildfires. The City's General Plan seeks to mitigate these potential threats to life, property, environmental quality, and economic vitality through preventative measures and through careful emergency planning. The following policies from the Safety Element of the City's General Plan are applicable to the proposed project:

- **S-3.01. Fire and Building Codes.** *We coordinate with Orange County Fire Authority to proactively mitigate or minimize the adverse effects of structural fires, wildfires and related hazards like erosion, hazardous materials release and structural collapse by implementing appropriate fire and building codes.*
- **S-6.01. Public Maps.** *We publicize areas of known hazardous materials contamination to reduce risk to public health, safety, and welfare.*

- **S-7.04. Interdepartmental and Interagency Collaboration.** *We collaborate among City departments and with organizations outside of the City for a comprehensive approach to emergency services and disaster preparedness, response and recovery, including continuity of operations (e.g. information technology and financial services. (City of San Clemente 2014)*

City San Clemente San Clemente Multi-Hazard Emergency Plan

The City of San Clemente Multi-Hazard Emergency Plan provides the framework for responding to major emergencies or disasters. This plan outlines a strategy to prepare for, respond to, and recover from an emergency or disaster that affects the city. This plan does not have jurisdiction over the proposed project; however, the proposed project could impact the implementation of the City’s designated evacuation routes, which are located along northbound I-5, Avenida Pico, and Avenue Vista Hermosa (City of San Clemente 2003) as further discussed in Section 4.8.3.3.

4.8.3 Impact Analysis

4.8.3.1 Methodology and Significance Criteria

The evaluation of impacts from hazards and hazardous materials during construction and operation of the proposed project was based on the review of relevant federal, state, county, and local laws; regulations; plans (e.g., emergency response and hazard mitigation plans); policy documents and standards; and hazards and hazardous materials that would be associated with construction, operation, and maintenance of the proposed project as described in Chapter 2, “Project Description.” State, county, and local maps were reviewed to determine the location of schools, known hazardous materials sites, airports, and fire severity zones as classified by CAL FIRE in proximity to the proposed project area.

Potential impacts from hazards and hazardous materials were evaluated in accordance to the following significance criteria. The criteria were defined based on the checklist items presented in Appendix G of the CEQA Guidelines. The proposed project would cause a significant impact related to hazards and hazardous materials if it would:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school;
- d) Be 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, would it create a significant hazard to the public or the environment;
- e) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- f) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

1 Appendix G of the CEQA Guidelines also includes the following significance criteria under Hazards and
2 Hazardous Materials:

- 3
- 4 • For a project located within an airport land use plan or, where such a plan has not been adopted,
5 within 2 miles of a public airport or public use airport, would the project result in a safety hazard
6 for people residing or working in the project area?
- 7 • For a project within the vicinity of a private airstrip, would the project result in a safety hazard for
8 people residing or working in the project area?
- 9

10 The proposed project would not be located within an airport land use plan area or 2 miles from a public
11 airport or private airstrip. Therefore, the proposed project would have no impact under these criteria, and
12 they are not further addressed in this section.

13 14 **4.8.3.2 Applicant Proposed Measures**

15
16 The applicant has committed to the following as part of the design of the proposed project. See Section
17 2.6, “Applicant Procedures, Plans, Standards, and Proposed Measures,” for a complete description of each
18 Applicant Proposed Measure (APM).

19
20 **APM HAZ-1: Conduct Environmental Site Assessment.** Prior to the start of earth disturbance
21 activities at the upper yard portion of the existing Capistrano Substation site, a Phase II
22 Environmental Site Assessment (soil sampling) would be performed and, if any contaminated soil is
23 found to be present, contaminated soils would be managed, removed, transported, and disposed of in
24 accordance with all applicable laws, ordinances and safety standards. The Environmental Site
25 Assessment would be completed pursuant to American Society for Testing and Materials
26 International standard requirements.

27 **APM HAZ-2: Hazardous Materials and Waste Management Plan.** The applicant would prepare a
28 project-specific Hazardous Materials and Waste Management Plan (HMWMP) following final CPUC
29 project approval and be submitted to the CPUC prior to issuance of any applicable Notice to Proceed
30 for the project. Handling, recycling, and waste transportation, and temporary waste storage
31 procedures would be outlined within the HMWMP. The project-specific HMWMP would include
32 site-specific procedures and would be developed based on SDG&E standards and applicable
33 hazardous materials laws, standards, and regulations. Sampling and cleanup levels would be
34 established in the HMWMP as follows:

- 35 • Confirmation samples would be taken to ensure that site conditions are consistent with current
36 and proposed land uses (i.e., electric substation);
- 37 • Confirmation samples would be taken, utilizing industry standard testing methods (e.g. EPA
38 Methods), for appropriate site specific contaminants of concern;
- 39 • Final sampling procedures would be included within the project-specific HMWMP; and
- 40 • Final cleanup levels would be identified in the HMWMP and be consistent with acceptable levels
41 for Commercial Industrial land uses.
- 42 • Plans for the unanticipated discovery of contaminated soil and/or groundwater during
43 construction would be included in the HMWMP, including:
 - 44 - Procedures in response to the discovery of contaminated soil or groundwater, including those
45 for stopping work, securing the contaminated area, preventing the spread of contamination,
46 and appropriate waste management (testing, profiling, shipping disposal);

- 1 - Training requirements for construction workers performing excavation activities;
- 2 - Dewatering procedures; and
- 3 - Procedures for notifying SDG&E and agency personnel in the event of the discovery of
- 4 contaminated soil and/or groundwater.

5 The applicant's outline of environmental procedures for management of the following would be
6 addressed in the HMWMP:

- 7 - Asbestos Management;
- 8 - Hazardous Materials Transportation Security Plans;
- 9 - Hazardous Materials and Waste Management;
- 10 - Hazardous Material and Waste Shipping;
- 11 - Hazardous Waste Minimization Plans; and
- 12 - Field Guidelines for Emergency Incidents.

13
14 Soil sampling and building materials sampling results from applicable Environmental Site
15 Assessments would be applied to development of the HMWMP.

16
17 **APM HAZ-3: Personal Protection Equipment.** Specialized crews would be utilized to conduct any
18 remediation (safe removal of contaminants) at the Capistrano Substation site prior to actual
19 construction of the proposed project commencing. Proper personal protection equipment would be
20 utilized by all remediation workers that may come into contact with known contaminated soil or
21 hazardous building materials. Personal protection equipment would be determined based upon the
22 nature of the contamination present at any given portion of the substation site and would comply with
23 all applicable CalOSHA standards.

24 **APM HAZ-4: Dewatering, Discharge, and Contaminated Water.** Pumped water that is not
25 potentially contaminated with sediments or other materials would be discharged in accordance with
26 requirements of the Construction General Permit. The water would be discharged near the extraction
27 location and thereby returned to the local groundwater. Potentially contaminated water would be
28 handled and disposed of offsite in accordance with applicable federal and state laws.

29 **APM HAZ-5: Recycling and Reuse.** It is SDG&E's practice to reuse or recycle all old structures/
30 poles, materials, and components following the retirement of substations, transmission lines, and
31 structures/poles. Whatever cannot be reused or recycled is disposed of at an appropriate facility
32 pursuant to all applicable laws.

33 **APM-HAZ-6: Fire Control.** ~~No work~~ Construction restrictions would occur during times of high
34 fire threat, such as Red Flag Warnings issued by the National Weather Service or other severe fire
35 weather conditions as identified by SDG&E.

36 Consistent with SDG&E's Electric Standard Practice 113.1 and the project-specific fire plan, prior to
37 starting construction activities, SDG&E would clear dead and decaying vegetation from proposed
38 project work areas where personnel are active or where equipment is in use or being stored within
39 rights-of-way, staging areas, stringing sites, and access roads. Cleared dead and decaying vegetation
40 would be either removed or chipped and spread on site.

41 The project-specific fire plan would include requirements for equipping diesel and gasoline operated
42 engines with spark arrestors, carrying emergency fire suppression equipment, furnishing a water truck
43 on or immediately adjacent to the proposed project work area, restricting smoking and vehicle idling,

1 construction restrictions during Red Flag Warning periods (as applicable), and conducting pre-
2 activity tailgate meetings that include fire safety discussions.

4 4.8.3.3 Environmental Impacts

5
6 **Impact HZ-1: Create a significant hazard to the public or the environment through the**
7 **routine transport, use, or disposal of hazardous materials.**
8 *LESS THAN SIGNIFICANT WITH MITIGATION*
9

10 Vehicles and equipment used during construction could contain or require the temporary, short-term use
11 of potentially hazardous substances, such as fuels, lubricating oils, hydraulic fluid, paints, solvents,
12 adhesives, and cleaning chemicals. Construction vehicles and large equipment would be fueled at existing
13 offsite fuel supply facilities. However, helicopters would be fueled at designated laydown areas (fly
14 yards), and small quantities of fuel (10 to 40 gallons) would be stored onsite for gasoline powered hand
15 tools. The routine use of hazardous materials could result in an accidental spill during construction and
16 refueling activities. The proposed project also would generate hazardous wastes during construction,
17 including used motor oils, used hydraulic fluids, discarded batteries, waste solvents and adhesives, and
18 old conductor wire.

19
20 All hazardous materials and wastes would have to be stored, transported, and disposed of in accordance
21 with applicable laws and regulations. The release of hazardous materials or wastes has the potential to
22 significantly impact the public and the environment if they are not properly contained and removed.
23 Implementation of the required Hazardous Material Business Plan (California HSC Section 25503.5
24 through 25504) and SWPPP (required under NPDES) would reduce potential impacts from the routine
25 use of hazardous materials. In addition, the Applicant would implement APM HAZ-2, which would
26 provide hazardous materials transportation security plans, hazardous materials and waste management
27 procedures, hazardous materials and waste shipping procedures, hazardous waste minimization plans, and
28 a field guide for emergency incidents. In this plan, the applicant would also detail the site-specific
29 hazardous waste handling, recycling, transportation, and storage procedures. Implementation of these
30 procedures should prevent significant hazardous from occurring during routine construction and
31 operations; however, the exact contents of these plans are not available at this time and therefore, their
32 comprehensiveness cannot be assessed and impacts could remain significant. Mitigation Measure (MM)
33 HAZ-1, described in Section 4.8.4, is designed to add specificity to APM HAZ-2 or supplement it to
34 ensure that specific measures and procedures are established. The applicant would be required to develop
35 a Hazardous ~~Material~~ Substances Contamination Prevention Plan or would have to supplement its
36 proposed plans with the elements of MM HAZ-1. Through compliance with the regulatory requirements
37 and implementation of APM HAZ-2 and MM HAZ-1, potential impacts associated with hazardous waste
38 management would be less than significant.
39

40 The proposed project would remove 208 wood poles from the project area, which are considered treated
41 wood waste as defined by Section 25150.7 of the California HSC. As detailed in APM HAZ-5, the
42 applicant would reuse or recycle all old wood poles and components to the greatest extent possible. Any
43 remaining treated wood waste would be disposed of at a Class I hazardous landfill or in a composite-lined
44 portion of a solid waste landfill unit. As a result, impacts from the disposal of treated wood waste would
45 be less than significant.
46

47 As identified from past asbestos and lead-based paint surveys (see Tables 4.8-1 and 4.8-2), construction
48 of the proposed San Juan Capistrano Substation would require ~~removal~~ abatement or stabilization of
49 contaminated materials and site remediation prior to demolition. As detailed in APM HAZ-3, the
50 applicant would use specialized crews to conduct removal and ~~remediation~~ stabilization activities. The
51 specialized crews would be qualified to handle asbestos, lead-based paint, and other hazardous

1 materials/wastes in accordance with OSHA and CalOSHA standards. As a result, impacts from the
2 disposal of hazardous waste during construction would be less than significant.

3
4 A scoping comment received from MCB Camp Pendleton noted that the soil, wood, metal, or other
5 construction debris removed from the project area within the MCB Camp Pendleton property may be
6 contaminated from the activities and materials associated with the Marine base, such as lead
7 contamination from discharged bullets. Improper disposal of this debris could result in a significant
8 impact. MM HAZ-2 would require the applicant to test any materials that would be removed from within
9 MCB Camp Pendleton boundaries in accordance with EPA Best Management Practices for Outdoor
10 Shooting Ranges (EPA-902-B-01-001). Additionally, the mitigation would also require any solid lead or
11 copper removed from the base to be recycled in accordance with the base Qualified Recycling Program
12 regulations. Implementation of MM HAZ-1 and MM HAZ-2 would reduce the risk of improperly
13 disposing of materials and contaminated soils from MCB Camp Pendleton to a less than significant level.

14
15 Removal of the existing transformers at the substation would result in the transportation of approximately
16 40,800 gallons of mineral oil from the project site to an appropriate recycling facility. New transformer
17 equipment would require approximately 55,800 gallons of mineral oil to be transported to the project site
18 for use at the substations. Federal and state laws regulate transport vehicle specifications, driver
19 qualifications, and load container specifications for the transportation of the proposed volume of mineral
20 oil. Compliance with applicable laws and implementation of APM HAZ-2, which requires the
21 development of plans associated with transportation of hazardous materials and waste, would reduce
22 potential impacts associated with the routine transportation of new and waste mineral oil to less than
23 significant.

24
25 Similar to the existing operations, mineral oil would be present in sealed electrical equipment (such as
26 transformers) at both substations during operation. The amount of mineral oil at the proposed San Juan
27 Capistrano Substation would be substantially more than is present at the existing Capistrano Substation.
28 The mineral oil would continue to be contained in equipment with secondary containment and secured
29 from public access. The applicant would prepare new SPCC plans for both substations to address the
30 increased amount of mineral oil stored onsite. Therefore, although there is an increase volume of mineral
31 oil at the substations during operation, the increased mineral oil would not cause any substantial change
32 as compared to current conditions. Operation and maintenance activities would be similar to those
33 associated with the existing facilities and, therefore, would have a less than significant impact on the
34 public or the environment through the routine transport, use, or disposal of hazardous materials.

35
36 **Impact HZ-2: Create a significant hazard to the public or the environment through**
37 **reasonably foreseeable upset and accident conditions involving the release of**
38 **hazardous materials into the environment.**
39 *LESS THAN SIGNIFICANT WITH MITIGATION*

40
41 As described under Impact HZ-1, the applicant would transport, use, or dispose of hazardous materials
42 and petroleum products in accordance with all applicable federal, state, and local regulations. However,
43 accidental releases or spills could still occur, representing a potential hazard to the public and
44 environment during construction and operations. Compliance with applicable regulations and
45 implementation of a SWPPP, HMBP, SPCC plan, APM HAZ-2, and APM HAZ-5 would reduce this risk
46 but not prevent significant impacts that may still occur from upset and accident conditions involving the
47 release of hazardous materials and wastes. MM HAZ-1 would require the implementation of a Hazardous
48 ~~Materials and Waste Management Plan and Substances~~ Contamination Prevention Plan, and MM HAZ-2
49 would require the applicant to test any materials within MCB Camp Pendleton boundaries in accordance
50 with EPA Best Management Practices for Outdoor Shooting Ranges (EPA-902-B-01-001).
51 Implementation of MM HAZ-1 and MM HAZ-2 would further reduce impacts from reasonably

1 foreseeable accidental conditions from the transport, use, or dispose of hazardous materials to a less than
2 significant level.

3
4 Damage to an inadequately plugged and abandoned well could create a significant hazard to public health,
5 underground and surface waters, or oil or gas reservoirs. Table 4.8-5 identifies the oil, gas, and
6 geothermal wells within 1,000 feet of the proposed project. Based on the dates of the final abandonment
7 letters filed with DOGGR (1978 and 1983), the wells listed in Table 4.8-5 were capped to relatively
8 recent standards. DOGGR considers the potential risk to damage of the wells listed in Table 4.8-5 to be
9 low based on their capping history and distance from the proposed project (Andrews pers. comm. 2014).
10 In the event that an unanticipated well is discovered during construction, damage to the well could result
11 in significant impact to life, health, and property. Implementation of MM HAZ-5 would reduce potential
12 impacts to less than significant by requiring construction workers to cease work within 50 feet of an
13 unanticipated well until approval to resume work is provided by DOGGR; therefore, the potential for the
14 proposed project to damage a well is less than significant.

15
16 As further discussed in Section 4.10, "Land Use and Planning," Talega Substation is located on land
17 owned by the United States Marine Corps within its Camp Pendleton base, which is an active military
18 base. Military training activities with live ammunition occurs regularly at MCB Camp Pendleton.
19 Therefore, the potential for construction or operations workers at Talega Substation to come into contact
20 with live ammunition exists, although the potential would be low because the construction would occur
21 within the same footprint as the existing substation. Implementation of MM HAZ-3 would require worker
22 training for all construction and operation workers prior to the start of work at Talega Substation to
23 inform the workers of the potential hazards associated with working within MCB Camp Pendleton and to
24 train workers how to identify an unexploded ordinance and what to do if a potential unexploded ordinance
25 is discovered. Significant impacts from worker exposure to unexploded ordinance would be reduced to
26 less than significant with the implementation of MM HZ-3.

27
28 Accidental contact with existing underground utility lines or private utilities line such as leach lines
29 associated with a septic system could result in a release of waste materials or could pose a safety risk for
30 the public and workers. Compliance with California Government Code 4216.1 (DigAlert) would reduce
31 potential impacts to public utility lines because underground utilities would be identified and marked
32 prior to construction so that they could be avoided. The potential for the proposed project to damage
33 existing underground infrastructure is less than significant.

34
35 Similar to the existing operations, mineral oil would be present in sealed electrical equipment (such as
36 transformers) at both substations during operation. The amount of mineral oil at San Juan Capistrano
37 Substation would be substantially more than is present at the existing Capistrano Substation. The
38 applicant would prepare new SPCC plans for both substations to address the increased amount of mineral
39 oil stored onsite. The implementation of the SPCC plan would ensure that the substation is designed with
40 sufficient containment around the stored mineral oil to capture all of the stored oil. Operation and
41 maintenance activities would be similar to those associated with the existing facilities and, therefore,
42 would have a less than significant impact on the public or the environment through the reasonably
43 foreseeable upset and accident conditions involving the release of hazardous materials into the
44 environment.

1 **Impact HZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous**
2 **materials, substances, or waste within 0.25 miles of an existing or proposed**
3 **school.**

4 *LESS THAN SIGNIFICANT WITH MITIGATION*

5
6 Under CEQA, emission of toxic air contaminants (TACs) needs to be considered with respect to schools.
7 As discussed in Section 4.3, "Air Quality," TACs are air pollutants suspected or known to cause cancer,
8 birth defects, neurological damage, or death. With the exception of lead, no ambient air quality standards
9 have been established for TACs. Instead, the compounds are managed on a case-by-case basis, depending
10 on the quantity and type of emissions and proximity of potential receptors. Statewide and local programs
11 identify industrial and commercial emitters of TACs and require reductions of these emissions. Federal
12 programs also require control of certain categories of TACs. CARB also recently identified diesel
13 particulate matter (PM) as a TAC. Diesel engines emit a complex mix of pollutants, the most visible of
14 which are very small carbon particles or "soot," known as diesel PM.

15
16 Seven schools are located within 0.25 miles of the proposed project: (Harold Ambuehl Elementary
17 School, St. Margaret's Episcopal School, San Juan Hills High School, Vista Del Mar Elementary and
18 Middle Schools, Jsera Catholic High School, Saddleback Valley Christian, and Junipero Serra High
19 School) (Table 4.8-4). Because of their proximity, these schools could be exposed to emissions of TACs
20 during construction. The main TAC emission during construction would be diesel PM from construction
21 equipment and heavy-duty vehicles traveling to construction areas. As further discussed in Section 4.3,
22 "Air Quality," other TAC emissions from such sources as gasoline-powered worker vehicles and
23 construction equipment would be negligible.

24
25 As further discussed in Section 4.3, "Air Quality," the CARB and Office of Environmental Health Hazard
26 Assessment have identified diesel PM as a carcinogenic. According to the Office of Environmental
27 Health Hazard Assessment, human exposures greater than eight years are considered chronic exposures.
28 Given that the construction of the proposed project would be short term, impacts on students and staff at
29 nearby schools would not result in substantial exposure to TACs. Impacts from hazardous emissions
30 would be less than significant.

31
32 Construction and operation could include the handling of acutely hazardous materials, substances, or
33 waste within 0.25 miles of the seven schools noted above and in Table 4.8-4. As discussed under Impact
34 HZ-1 and Impact HZ-2, compliance with applicable regulations and implementation of a SWPPP, SPCC
35 plan, HMBP, APM HAZ-1, APM HAZ-2, and APM HAZ-5 would reduce the risk of releases but not
36 prevent significant impacts that may still occur from upset and accident conditions involving the release
37 of hazardous materials. Implementation of MM HAZ-1 would further prevent the potential to release
38 hazardous materials and would reduce impacts from the handling of hazardous materials to less than
39 significant levels.

40
41 **Impact HZ-4: Be located on a site which is included on a list of hazardous materials sites**
42 **compiled pursuant to Government Code Section 65962.5 and, as a result,**
43 **would it create a significant hazard to the public or the environment.**

44 *LESS THAN SIGNIFICANT*

45
46 The proposed project would not be located within 1,000 feet of an open Cortese List site. Therefore,
47 construction and operation of the proposed project would not result in any significant hazard to the public
48 or environment due to affecting operations at Cortese List sites. However, MCB Camp Pendleton's IR
49 Program currently has 16 active IR sites that are in different phases of cleanup (USMC 2014b). The two
50 closest IR sites to the proposed project are over 3 miles from Talega Substation (USMC 2014b).
51 Therefore, construction and operation of the proposed project would not unearth contamination or

1 adversely affect activities at these sites, and, as a result, there would be no significant hazard to the public
2 or environment relating to IR sites.

3
4 Construction of the proposed San Juan Capistrano Substation would require significant soil disturbance
5 throughout the existing Capistrano Substation. As discussed in Section 4.8.1.1, soil sampling in 2009 and
6 building surveys found lead, asbestos, and contaminated soil at the lower yard and around the perimeter
7 of the upper yard. The complete extent of contaminated soils in the upper yard of the Capistrano
8 Substation is unknown because the entire upper yard of the existing substation was not sampled. With the
9 implementation of APM HAZ-1, the applicant would conduct a Phase II Environmental Site Assessment
10 soil sampling within the upper yard of the existing Capistrano Substation prior to the start of earth
11 disturbance activities at the upper yard. APM HAZ-2 specifically addresses the unanticipated discovery of
12 contaminated soil or groundwater during construction with procedures, training, and notification
13 requirements. As detailed in APM HAZ-3, the applicant would use specialized crews to conduct removal
14 and remediation activities. The specialized crews would be qualified to handle asbestos, lead-based paint,
15 and other hazardous wastes in accordance with OSHA and CalOSHA standards. All hazardous wastes
16 would be handled and disposed of in accordance with federal, state, and local regulations. Through the
17 implementation of these measures, the impact from unearthing contaminated soils on the public and
18 environment would be less than significant.

19
20 **Impact HZ-5: Impair implementation of or physically interfere with an adopted**
21 **emergency response plan or emergency evacuation plan.**
22 **LESS THAN SIGNIFICANT**
23

24 Primary evacuation routes for the cities of San Juan Capistrano and San Clemente include northbound I-5,
25 westbound State Route 74, Camino Capistrano, Avenida Pico, and Avenue Vista Hermosa (City of San
26 Juan Capistrano 2007; City of San Clemente 2003). The Orange County Hazards Mitigation Plan does not
27 identify specific evacuations routes (Orange County n.d.).

28
29 Construction of the proposed project would require a partial closure of Camino Capistrano, and a full
30 roadway closure may be required for short-term periods during the installation of new underground
31 conduit. Additionally, traffic stops would be required along I-5 during conductor stringing. If an
32 emergency were to occur while Camino Capistrano or I-5 were closed, this would affect the
33 implementation of San Juan Capistrano and San Clemente’s emergency evacuation plan, thus causing a
34 significant impact. With the implementation APM TT-3, “Emergency Access,” and APM TT-7, “Traffic
35 Control Plans,” the proposed project would minimize short-term construction-related impacts on local
36 traffic, including emergency access. The traffic control plans would detail how construction activities
37 would be coordinated with the affected local agencies in order to prevent closure of any emergency access
38 route. Flaggers may briefly hold traffic back while conductor is pulled across a roadway, but emergency
39 vehicles would be provided access even in the event of temporary road closures. Emergency access would
40 not be directly impacted by construction of the proposed project because all streets would remain open to
41 emergency vehicles at all times during construction activities.

42
43 Operation and maintenance activities would be similar to those associated with the existing facilities and,
44 therefore, would not impair an existing emergency response plan or emergency evacuation plan. Impacts
45 on traffic are further discussed in Section 4.15, “Traffic and Transportation.”
46

1 **Impact HZ-6: Expose people or structures to a significant risk of loss, injury, or death**
2 **involving wildland fires, including where wildlands are adjacent to**
3 **urbanized areas or where residences are intermixed with wildlands.**
4 ***LESS THAN SIGNIFICANT WITH MITIGATION***
5

6 Construction activities associated with the proposed project would increase fire risk during refueling,
7 vehicle and equipment use, welding, vegetation clearing, worker cigarette smoking, and other high heat
8 activities. The applicant would implement its existing Wildland Fire Prevention and Fire Safety (ESP No.
9 113.1), which includes requirements for carrying emergency fire suppression equipment, conducting
10 “tailgate meetings” that cover fire safety discussions, and restrictions on smoking and idling vehicles.
11 Consistent with ESP 113.1, the applicant would also implement a project-specific fire plan to assist in
12 safe practices to prevent fires. This plan would include equipping diesel and gasoline operated engines
13 with spark arrestors, carrying emergency fire suppression equipment, and furnishing a water truck on or
14 immediately adjacent to the proposed project area. The applicant would also implement APM HAZ-6,
15 which would require the applicant to issue a stop work order during times of high fire threat such as a Red
16 Flag Warning issued by the National Weather Service.

17
18 The applicant would construct and maintain vegetation clearance along the proposed double-circuit 230-
19 kV transmission line in accordance with California PRC Sections 4291 through 4299, which regulate
20 vegetation management and CPUC GO 95, GO 128, GO 165, and GO 166, which regulate overhead and
21 underground transmission line construction, inspection, and safety. Construction activities would
22 significantly increase fire risk regardless of vegetation clearing and compliance with applicable laws,
23 regulations, and standards. To ensure that the applicant’s project-specific fire plan meets all of the
24 objectives and standards of the Orange County Fire Authority, the applicant would prepare the fire plan to
25 meet the requirements of MM HAZ-4. MM HAZ-4 requires the applicant to develop a Fire Control and
26 Emergency Response Plan in coordination with the Orange County Fire Authority (OCFA). The Fire
27 Control and Emergency Response Plan would identify fire prevention measures and response and
28 communication protocols in the event of a fire emergency. Implementation of MM HAZ-34 would reduce
29 the impacts associated with the increased fire risk to less than significant.
30

31 Operation and maintenance activities would be similar to those associated with the existing facilities and,
32 therefore, would not result in a new potential for wildfires. As part of the proposed project, the
33 replacement of wood poles with steel poles is often undertaken specifically to minimize the risk of
34 wildfires that exists when certain atmospheric conditions occur within fire threat areas. Additionally,
35 undergrounding the conductors reduces the fire risk. The new steel structures and underground segments
36 of the proposed double-circuit 230-kV transmission line and proposed 12-kV distribution line would
37 withstand more severe fire conditions and reduce overall fire risk from the existing conditions and
38 therefore would be a beneficial impact by reducing risk of loss, injury, or death from wildfires.
39

40 **4.8.4 Mitigation Measures**
41

42 **MM HAZ-1: Hazardous ~~Materials~~ Substances Contamination Prevention Plan.** Prior to construction,
43 the applicant shall prepare and implement a Hazardous ~~Materials~~ Substances Contamination Prevention
44 Plan supplementing the Hazardous Material Business Plan to prevent the release of hazardous materials
45 and hazardous waste. The plan will include the following requirements and procedures:
46

- 47 1. Training requirements for construction workers in appropriate work practices, including spill
48 prevention and response measures. Additional training requirements for those performing
49 excavation activities shall be required and shall include training on types of contamination (e.g.,
50 petroleum hydrocarbons, lead, asbestos, and *hazardous materials* (as defined by the California

1 HSC) and identifying potentially hazardous contamination (e.g., stained or discolored soil and
2 odor).

- 3 2. Contain all hazardous materials at work sites and properly dispose of all such materials.
 - 4 a. Hazardous materials shall be stored on pallets within fenced and secured areas and protected
5 from exposure to weather and further contamination.
 - 6 b. Fuels and lubricants shall be stored only at designated staging areas.
- 7 3. Maintain hazardous material spill kits for small spills at all active work sites and staging areas.
8 Thoroughly clean up all spills as soon as they occur.
- 9 4. Store sorbent and barrier materials at all construction staging areas, including staging areas used
10 during activities for decommissioning. Sorbent and barrier materials will be used to contain
11 runoff from contaminated areas and from accidental releases of oil or other potentially hazardous
12 materials to prevent the runoff from entering the storm drainage system.
- 13 5. Perform all routine equipment maintenance at a shop or at the staging area and recover and
14 dispose of wastes in an appropriate manner.
- 15 6. Monitor and remove any vehicles with chronic or continuous leaks from use and complete repairs
16 before returning them to operation.
- 17 7. Store shovels and drums at the staging areas. If small quantities of soil become contaminated, use
18 shovels to collect the soil and store in drums before proper offsite disposal. Large quantities of
19 contaminated soil may be collected using heavy equipment and stored in drums or other suitable
20 containers prior to disposal. Should contamination occur adjacent to staging areas because of
21 runoff, shovels and/or heavy equipment shall be used to collect the contaminated material.
- 22 8. Transporting, shipping, and disposal procedures for hazardous waste.
- 23 9. Procedures for managing asbestos material.
- 24 10. Procedures for notifying applicant and agency personnel in the event of the discovery of
25 contaminated soil and/or groundwater. Contact information for federal, regional, and local
26 agencies, the applicant's environmental coordinator(s) responsible for the cleanup of
27 contaminated soil or groundwater, and licensed disposal facilities and haulers.
- 28 11. Dewatering procedures including storage, testing, treatment, and disposal requirements and
29 dewatering best management practices with reference to the applicant's SWPPP.
30

31 This plan will be submitted to the CPUC for review and approval 30 days prior to the start of construction of
32 the proposed project.
33

34 **MM HAZ-2: Contaminated Materials from Camp Pendleton.** Excavation, grading, or removal of any
35 materials within MCB Camp Pendleton boundaries shall be accomplished in accordance with EPA Best
36 Management Practices for Outdoor Shooting Ranges (EPA-902-B-01-001), RCRA, the Clean Water Act,
37 40 CFR 260 (Federal Hazardous Waste Regulations), and California Title 22 (California Hazardous
38 Waste Regulations). All work shall be accomplished with every effort to prevent the spread of any
39 potential contamination or release of any potential existing contaminants to the environment in
40 accordance with all federal, state and local laws, regulations and instructions. Prior to the removal of any
41 soil or wood and construction debris that has been used in live fire training and received impact from
42 rounds, the soil or debris shall be sampled for appropriate hazardous in accordance all federal, state and
43 local laws, regulations and instructions. Also, prior to the removal of any wood and construction debris
44 that has been used in live fire training and received impact from rounds, the debris should be sampled for
45 lead and other constituents. If the soil, wood, or debris is determined to be considered hazardous waste, it

1 will be handled and disposed of in accordance with applicable hazardous waste regulations. All hazardous
2 waste manifests shall be signed by the Hazardous Waste Branch, AC/S Environmental Security. Solid
3 lead or copper removed from the base shall be recycled in accordance with the base Qualified Recycling
4 Program regulations.

5
6 **MM HAZ-3: Worker Safety Training.** As part of the worker environmental awareness program, the
7 applicant will prepare a safety training module, in coordination with an appropriate representative from
8 MCB Camp Pendleton, to inform all onsite personnel of the active military training activities occurring
9 within MCB Camp Pendleton and the potential hazards associated with working at Talega Substation.
10 The worker environmental awareness program shall include training on how to identify an unexploded
11 ordinance and what procedures shall be followed if a potential unexploded ordinance is identified,
12 including the "Three R's" method: Recognize, immediately Retreat, and Report to the Provost Marshal's
13 Office at (760) 725-3888 or dial 911 immediately. The applicant shall provide a copy of the training
14 material and trainee sign-in sheets to the CPUC prior to construction.

15
16 **MM HAZ-4: Fire ~~Control~~Prevention and Emergency Response Plan.** The applicant will develop and
17 implement a Fire ~~Control~~Prevention and Emergency Response Plan. This plan, and a record of contact
18 and coordination with the Orange County Fire Authority (OCFA) will be submitted to the CPUC for
19 review and approval 30 days prior to the start of construction of the proposed project. The plan will
20 describe fire prevention and response practices that the applicant will implement during construction of
21 the proposed project to minimize the risk of fire and, in the case of fire, provide for immediate
22 suppression and notification. The plan will include:

- 23
- 24 • Fire prevention and response practices, ~~including the proper~~ regarding the dispensing and storage of
25 gasoline, diesel, and other fuels and combustible chemicals; power tool and equipment use;
26 emergency access; fire suppression equipment and training; ~~electrical grounding; and~~ vegetation
27 clearing; ~~designated parking areas; appropriate climatic conditions and designated areas to perform~~
28 welding or blow torch activities and other hot-work activities; and ceasing any or all work activities,
29 including helicopter use, as directed by the OCFA or other applicable fire department
30 representatives.
 - 31 • Communication protocols for onsite workers to coordinate with local agencies and emergency
32 personnel and for the applicant's environmental health and safety personnel to coordinate with on-
33 site workers in the event of fire, flood, or other emergencies or increased risk of emergency during
34 construction or operation of the project.
 - 35 • ~~The assignment of Fire Risk Managers who~~ Project Construction Manager, Contract
36 Administrators, and/or Site Foreman will be present at each worksite during construction
37 activities, ~~whose sole and it will be their responsibility will be~~ to monitor the contractor's fire-
38 prevention activities. The Project Construction Manager, Contract Administrators, and/or Site
39 Foreman and who will have full authority to stop construction as needed to prevent fire hazards.
40 ~~The Fire Risk Managers will~~ The Project Construction Manager, Contract Administrators, and/or
41 Site Foreman responsibilities will include:
 - 42 - Maintain a complete copy of the Fire ~~Control~~Prevention and Emergency Response Plan;
 - 43 - Serve as ~~liaisons to fire departments and act as~~ points of contact for fire departments in the
44 event of fire or other emergency;
 - 45 - Manage the prevention, detection, control, and extinguishing of fires ~~set~~started accidentally
46 as a result of construction activity;
 - 47 - Review site-specific fire ~~control~~prevention and emergency response plans ~~with construction~~
48 personnel prior to starting work ~~at~~in each project area;

- Ensure that all construction personnel are trained in fire safety measures relevant to their responsibilities. At minimum, construction personnel will be trained in fire prevention and emergency reporting ~~and incipient stage fire prevention, control, and extinguishing. Each member of the construction work force will be trained and equipped to extinguish small fires~~ (i.e., the fire can be controlled or extinguished by portable fire extinguishers, small hose systems, or portable water supplies without the need for protective clothing or breathing apparatus). ~~Each member of the construction workforce will be trained and equipped to extinguish small fires;~~
 - Be equipped with radio and cellular telephone access for the duration of each work day;
 - Ensure that all construction personnel are provided with operational radio and/or cellular telephone access ~~at each worksite~~ to allow for immediate reporting of fires or other emergencies and ensure that communication pathways and equipment are tested and confirmed operational each day prior to initiating construction activities at each worksite;
 - Maintain an updated key personnel and emergency services contact (telephone and email) list onsite and available to construction personnel; and
 - Construction workers will immediately report all fires to the nearest Fire Risk Manager.
- ~~• Fire prevention practices, including the proper dispensing and storage of gasoline, diesel, and other fuels and combustible chemicals; electrical grounding; designated parking area, appropriate climatic conditions and designated areas to perform welding or blow torch activities and other hot work activities; and ceasing any or all work activities, including helicopter use, as directed by the OCFA or other applicable fire department representatives in response to fire incidents.~~
 - The necessary required fire suppression equipment, tools, and other materials to be with each construction vehicle on the Project. (e.g., fire extinguishers), tools (e.g., shovels); and other materials necessary to prevent fires, control the spread of fire if started, and providing assistance to extinguish fires started as a result of construction of the project for construction vehicles.

MM HAZ-5: Discovery of an Unrecorded Oil or Gas Well. If an unrecorded oil and gas well is discovered during construction of the proposed project and the well is located within 50 feet of a construction disturbance area, the applicant shall immediately cease work within 50 feet of the well and notify the California Department of Conservation Division of Oil, Gas, and Geothermal Resources (DOGGR) Cypress District Office. Work shall not resume within 50 feet of the unrecorded well until DOGGR has determined appropriate actions to be taken and given written notice of approval for work to resume.

4.9 Hydrology and Water Quality

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the South Orange County Reliability Enhancement Project (proposed project) with respect to hydrology and water quality. During scoping, the following issues were raised and are addressed in this section: impacts on wetlands and drainages; impacts on drainage patterns and water quality; anticipated changes in impervious surface area; downstream receiving waters that may receive contributory runoff from the project; impacts on municipal drainage systems; and impacts from water extraction activities. Impacts associated with geologic hazards are discussed in Section 4.6, “Geology, Soils, and Mineral Resources,” and impacts on wetlands and aquatic habitats are discussed in Section 4.4, “Biological Resources.” Pollutants generated from construction and operation of the project are discussed in Section 4.8, “Hazards and Hazardous Materials.”

4.9.1 Environmental Setting

4.9.1.1 Regional Area, Precipitation, and Drought

The proposed project would be located within Orange and San Diego counties, with the majority of the project being located in Orange County. The proposed project would fall within the San Juan Hydrologic Unit¹ and would include components in the San Mateo Canyon, San Clemente, and Mission Viejo Hydrologic Areas² (SDRWQCB 2012). The San Juan Hydrologic Unit covers about 500 square miles and includes major population centers, such as San Juan Capistrano and San Clemente, and undeveloped areas of Orange and San Diego counties.

The region’s coastal climate is typically mild, with temperatures averaging about 65 degrees Fahrenheit (SDRWQCB 2012). The majority of the precipitation falls between November and February, and average annual precipitation is between 10 to 13 inches (SDRWQCB 2012).

Drought Conditions

On January 17, 2014, Governor Brown issued an Executive Order declaring a State of Emergency due to current drought conditions in California and urged Californians to reduce water usage by 20 percent (California Office of the Governor 2014). However, over the past 20 years, Southern California has invested over 15 billion dollars in water storage and infrastructure improvements to prepare for times of drought. According to the Municipal Water District of Orange County (MWDOC), there is no immediate danger of water supply interruptions in Orange County as of May 2014 (MWDOC 2014a).

¹ In coastal areas, a Hydrologic Unit is two or more small contiguous watersheds having similar hydrologic characteristics, each watershed being directly tributary to the ocean and all watersheds emanating from one mountain body located immediately adjacent to the ocean.

² A Hydrologic Area is a major logical subdivision of a Hydrologic Unit, which includes both water-bearing and nonwater-bearing formations. It is best typified by a major tributary of a stream, a major valley, or a plain along a stream containing one or more groundwater basins and having closely related geologic, hydrologic, and topographic characteristics.

1 **4.9.1.2 Surface Water Bodies**

2
3 **Lakes, Reservoirs, Dams, and Levees**

4 There is a small reservoir on Trampas Canyon Creek, located about 1.5 miles west of proposed
5 Transmission Line Pole 22 and the Prima Deschecha Landfill. The reservoir is created by the earthen
6 Trampas Canyon Dam (City of San Juan Capistrano 1999). No other large lakes or reservoirs exist within
7 2 miles of the proposed project.

8
9 **Rivers, Drainages, Creeks, and Streams**

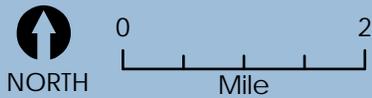
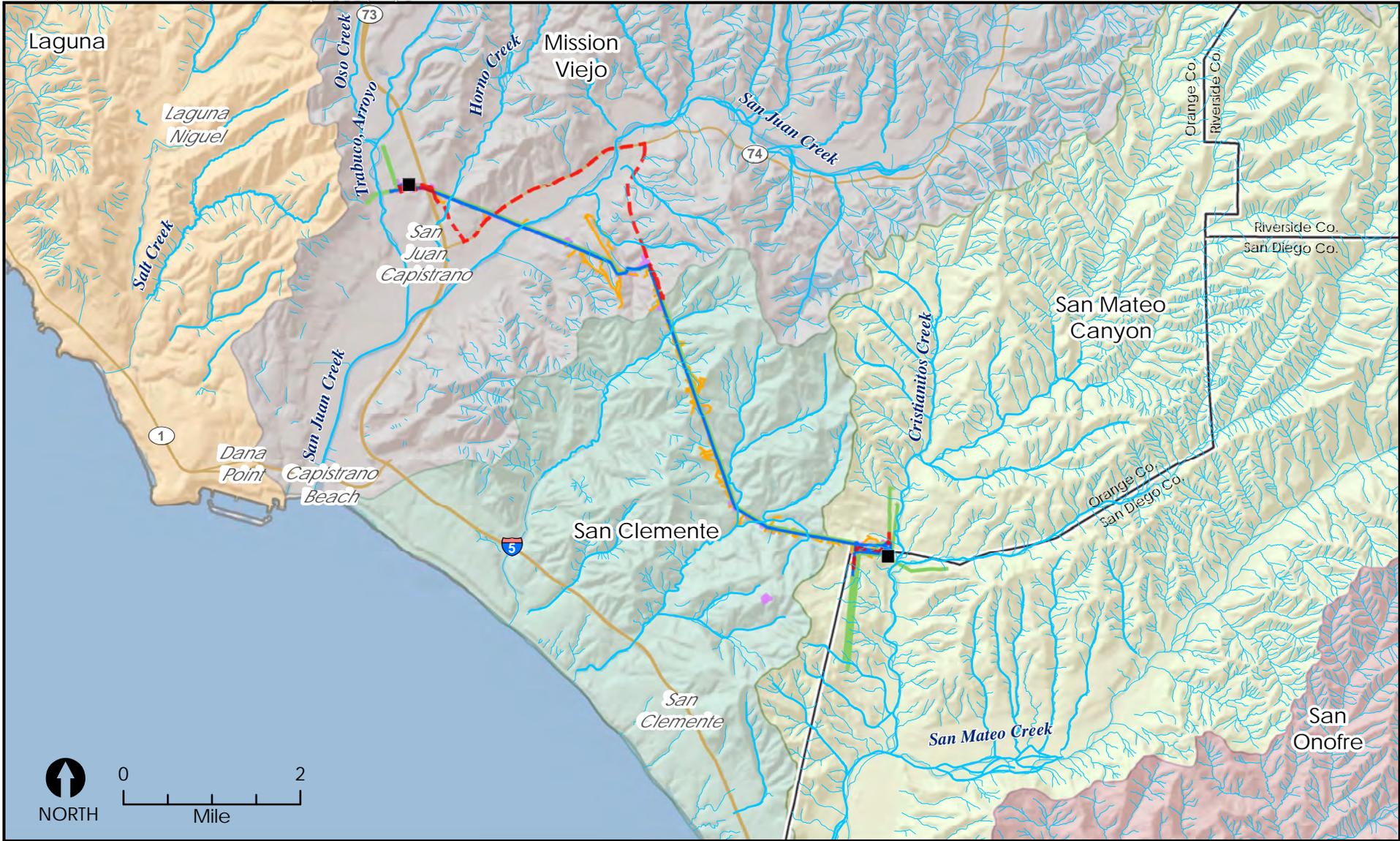
10 The proposed project would cross a number of ~~perennial and intermittent creeks and drainages~~ (Table
11 4.9-1 and Figure 4.9-1). Most of the drainages in the vicinity of the proposed project flow intermittently
12 due to the seasonal nature of precipitation and relatively small size of the watersheds. The majority of the
13 drainages that cross undeveloped foothill terrain along the proposed double-circuit 230-kilovolt (kV)
14 transmission line route remain in their natural conditions, whereas many of the ~~watercourses~~ drainages in
15 the low-lying developed portions of the proposed project area have been altered through straightening
16 and/or fortification with sand levees or concrete channels for flood control purposes. San Juan Creek is
17 the largest surface water body that would be spanned by the proposed project. All of the drainages that
18 would be spanned by the proposed project flow to the Pacific Ocean.

19 **Table 4.9-1 Watersheds and ~~Water Bodies~~ Drainages Spanned by the Proposed Project**

Watershed	Project Segment	Water body Drainages Spanned
Mission Viejo	TL Segments 1a and 1b	San Juan Creek
		Horno Creek (Tributary to San Juan Creek)
		Unnamed Tributary to San Juan Creek
	12-kV Segment H	Tributaries (2) to San Juan Creek
San Clemente	TL Segment 2	Rancho San Juan Drainage
	TL Segment 3	Prima Deshecha Canada
		Unnamed Tributary to Prima Deshecha Canada
		Segunda Deshecha Canada
		Unnamed Tributaries (3) to Segunda Deshecha Canada
San Mateo Canyon	TL Segment 4	Tributaries (2) to Christianitos Creek
	12-kV Segment M	Unnamed Tributary to Christianitos Creek

20
21 **Jurisdictional Waters**

22 Jurisdictional waters include wetlands, “Waters of the U.S.,” and “Waters of the State.” Wetlands and
23 drainages within the proposed project area may be subject to the jurisdiction of the U.S. Army Corps of
24 Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and/or the San Diego
25 Regional Water Quality Control Board (SDRWQCB). The jurisdictional limits among the three agencies
26 vary based on different legislation that defines the boundaries of each agency’s regulatory authority.



- Proposed transmission line
 - Existing transmission line
 - Access road
 - - - Distribution Line
 - Staging areas, stringing sites, work areas, and helicopter fly yards
 - Roads
 - County Boundary
-
- Laguna
 - Mission Viejo
 - San Clemente
 - San Mateo Canyon
 - San Onofre
 - ~ Drainages

Sources: NHD 2014

Figure 4.9-1

Hydrologic Areas in the Proposed Project

South Orange County Reliability Enhancement Project

1 Field surveys were conducted in May 2010, July 2010, December 2011, and February 2012 to delineate
2 potential jurisdictional wetlands, “Waters of the U.S.,” and “Waters of the State” within the proposed
3 project area (TRC 2012). During the delineation, 12 drainages were identified that may be subject to the
4 jurisdiction of the USACE, CDFW, and the SDRWQCB (TRC 2012). These drainages included
5 relatively permanent (or perennial) waterways, associated riparian areas, and ephemeral drainages.
6

7 Jurisdictional waters and regulatory requirements are further discussed under the “Clean Water Act”
8 heading in Section 4.9.2 and in Section 4.4, “Biological Resources.”
9

10 **4.9.1.3 Groundwater**

11
12 The majority of the proposed project area is located in upland terrain, with bedrock close to the surface,
13 or in narrow canyons without substantial alluvial groundwater basins. The proposed project area crosses
14 two groundwater basins: the San Juan Valley Groundwater Basin and the San Mateo Valley Groundwater
15 Basin (Figure 4.9-1). The San Juan Valley Groundwater Basin underlies the San Juan Valley and several
16 tributary valleys in southern Orange County (DWR 2004). The San Mateo Valley Groundwater Basin
17 underlies the San Mateo Valley and Christianitos Canyon in northwestern San Diego County and
18 southeastern Orange County (DWR 2003). The primary water-bearing hydrogeologic unit in both basins
19 is Quaternary alluvium. Quaternary alluvium can be more than 125 feet thick in the San Juan Valley
20 Groundwater Basin and 100 feet thick in the San Mateo Groundwater Basin, although the average
21 thickness of the Quaternary alluvium is 65 feet thick in the San Juan Valley Groundwater Basin and 60
22 feet thick in the San Mateo Groundwater Basin (DWR 2003, 2004).
23

24 Groundwater recharge in the San Juan Valley Groundwater Basin is primarily from in-stream flows,
25 precipitation to the valley floor, and water from spring-flow (DWR 2004). The total storage capacity of
26 the basin has been estimated to be between 63,000 and 90,000 acre-feet (af) (DWR 2004). A recent study
27 of the basin’s groundwater budget has not been completed, but a 1994 study estimated average annual
28 pumping to be about 5,625 acre-feet per year (afy), average annual subsurface inflow to be about 2,250
29 afy, and average annual subsurface outflow to the Pacific Ocean to be about 450 afy (DWR 2004).
30 Groundwater levels have historically been stable, although depth to groundwater varies based on
31 seasonal cycles and weather conditions (DWR 2004).
32

33 Groundwater recharge in the San Mateo Valley Groundwater basin is primarily from percolation of
34 runoff after precipitation events and from effluent generated by a wastewater treatment plant (DWR
35 2003). Recharge takes places in natural reaches (i.e., areas of the stream channel that are not lined with
36 concrete) and at five spreading basins in the stream channel of San Mateo Creek (DWR 2003). The total
37 storage capacity of the basin has been estimated to be about 14,000 af (DWR 2003). In 1997, average
38 annual groundwater production for potable use was estimated to be about 900 afy, and average annual
39 groundwater production for irrigation was estimated to be about 640 afy (DWR 2003). Groundwater
40 levels in the basin vary depending on weather conditions, but have historically remained stable (DWR
41 2003). In some areas of the basin, groundwater has been encountered at as little as 5 feet below ground
42 surface (DWR 2003).
43

44 **4.9.1.4 Water Quality**

45 **Surface Water**

46
47 Surface water quality in the proposed project area is primarily affected by nonpoint sources of pollution
48 transported in storm water or irrigation runoff (e.g., automotive care products, fertilizers, pesticides).
49 None of the creek segments crossed by the proposed project are included on the California list of

1 impaired waterways pursuant to Clean Water Act (CWA) Section 303(d). However, three creeks crossed
2 by the proposed project have impaired segments downstream: San Juan Creek, Prima Deshecha Creek,
3 and Segunda Deshecha Creek (SDRWQCB 2009) (Table 4.9-2).
4

Table 4.9-2 Water Bodies in the Vicinity of Proposed Project on the California 303(d) List

Stream Segment	Pollutant	Sources
Lower Mile of San Juan Creek	dichlorodiphenyldichloroethylene	unknown source
	indicator bacteria	nonpoint and point sources
	phosphorus	unknown point sources, unknown nonpoint sources, and urban runoff/storm sewers
	selenium	
	total nitrogen	
	toxicity	
Lower Mile of Prima Deshecha Creek	cadmium	unknown point sources, unknown nonpoint sources, and urban
	nickel	
	phosphorus	
	turbidity	
Lower Mile of Segunda Deshecha Creek	phosphorus	unknown point sources, unknown nonpoint sources, and urban
	toxicity	
	turbidity	

Source: SDRWQCB 2009

5
6 **Groundwater**

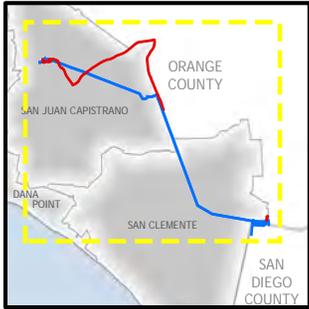
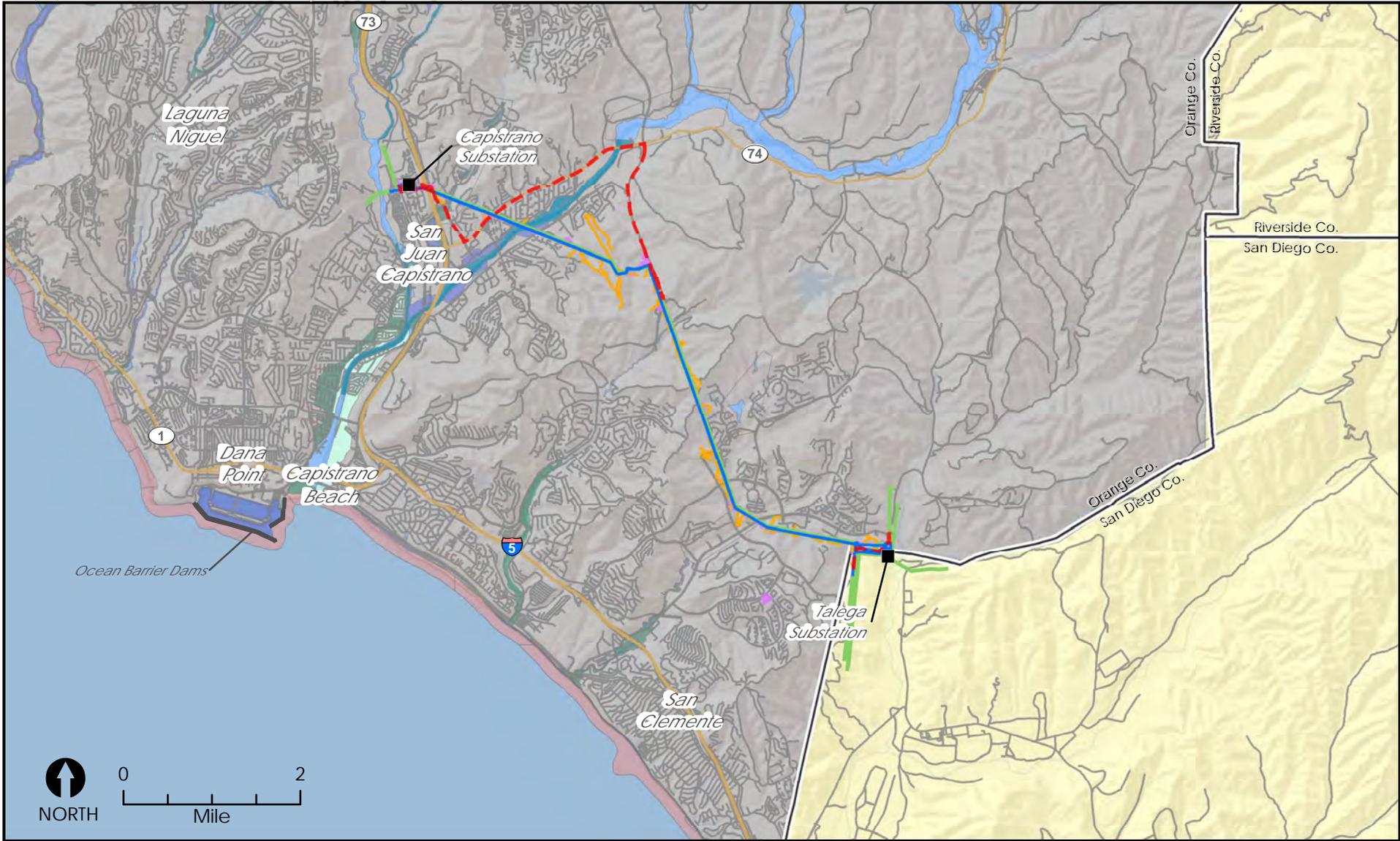
7 Groundwater quality is rated based on the amount of total dissolved solids (TDS) in the water. The
8 recommended secondary drinking water standard³ for TDS ranges between 500 milligrams per liter
9 (mg/L) and 1,000 mg/L (SDRWQCB 2009). TDS concentrations in the San Juan Valley Groundwater
10 Basin range from below 500 mg/L in the upper reaches of the valleys to near 2,000 mg/L near the coast
11 (DWR 2004). TDS concentrations in the San Mateo Valley Groundwater Basin range from 490 to 770
12 mg/L, with an average of 586 mg/L (DWR 2003).
13

14 **4.9.1.5 Flood and Dam Failure Inundation Areas**

15
16 A 100-year flood hazard area is an area of land that has a one percent chance of being inundated by a
17 flood during any year (FEMA 2013). The proposed project crosses the 100-year flood hazard areas of
18 Horno Creek, San Juan Creek, Prima Deshecha Creek, and Segunda Deshecha Creek (FEMA 2014)
19 (Figure 4.9-2). The proposed project would generally span these areas; however, Transmission Line
20 Poles 9 and 10 would be located within the 100-year flood hazard area of San Juan Creek. In addition,
21 existing access roads cross the 100-year flood hazard zones of San Juan Creek, Prima Deshecha Creek,
22 and Segunda Deshecha Creek. The Talega Substation and proposed San Juan Capistrano Substation are
23 not located within a 100-year flood hazard area.
24

25 The proposed project crosses one dam inundation area along San Juan Creek, which would be associated
26 with the failure of the Trampas Canyon Dam (Figure 4.9-2). However, the predicted inundation areas are
27 similar to that of the 100-year flood hazard area of San Juan Creek, albeit slightly greater in spatial extent
28 (City of San Juan Capistrano 1999).
29

³ Secondary drinking water standards are non-mandatory water quality standards that are established as guidelines for public water systems in managing their drinking water for aesthetic considerations such as taste, color, and odor.



- Proposed transmission line
 - Existing transmission line
 - Access road
 - - - Distribution Line
 - Staging areas, stringing sites, work areas, and helicopter fly yards
 - Roads
 - Local road
 - County Boundary
 - Regional Dams
-
- Flood Plain A
 - Flood Plain AE
 - Flood Plain AE, Floodway
 - Flood Plain AH
 - Flood Plain AO
 - Flood Plain D
 - Flood Plain VE
 - X, 20% Annual Chance Flood Hazard
 - X, Area of Minimal Flood Hazard

Sources: FEMA 2015

Figure 4.9-2

Dam Inundation Areas and Floodplains within the Proposed Project Area
 South Orange County Reliability Enhancement Project

4.9.2 Regulatory Setting

4.9.2.1 Federal

Clean Water Act and Sections 303(d), 401, 402, and 404

The CWA (33 United States Code [U.S.C.] §1251 et seq.) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and has given the United States Environmental Protection Agency (U.S. EPA) the authority to implement pollution control programs.

The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The proposed project would be located within the jurisdiction of the SDRWQCB.

CWA Section 402 authorizes RWQCBs to issue NPDES Construction General Storm Water Permits (Water Quality Order No. 2009-009-DWQ), referred to as Construction General Permits. The NPDES permitting process requires that a Storm Water Pollution Prevention Plan (SWPPP) be developed and implemented for each construction site covered by the NPDES Construction General Permits. SWPPPs are required for storm water discharges associated with any construction activity, including clearing, grading, excavation, reconstruction, or dredge and fill that results in the disturbance of at least one acre of total land area. Since the proposed project would disturb more than one acre, a SWPPP would be required. For a linear project (e.g., powerline construction), all disturbance is accounted for and totaled along the length of the linear route (SWRCB 2013). The purpose of a SWPPP is to:

- Identify all pollutant sources that may affect the quality of discharges of storm water associated with construction activity from the construction site;
- Identify non-storm water discharges;
- Identify, construct, implement, and maintain best management practices (BMPs) to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the construction site during construction;
- Develop a maintenance schedule for BMPs installed during construction that are designed to reduce or eliminate pollutants after construction is completed;
- Identify a sampling and analysis strategy and sampling schedule for discharges from construction activity that discharge directly to a water body listed for impairment due to sedimentation, in accordance with CWA Section 303(d); and
- Identify a sampling and analysis strategy and sampling schedule for discharges that have been discovered through visual monitoring to be potentially contaminated by pollutants not visually detectable in the runoff.

The SWPPP would apply to all components of the proposed project that would result in ground disturbance.

1 The CWA authorizes the USACE to regulate the discharge of dredged or fill material into the waters of
2 the United States and adjacent wetlands. Jurisdictional delineations are fundamental to USACE and U.S.
3 EPA regulatory responsibilities under CWA Section 404. The USACE evaluates permit applications for
4 all construction activities that occur within wetlands or waterways determined by formal delineations to
5 be waters of the United States. Applicants applying for USACE permit coverage under CWA Section 404
6 for actions that could result in any discharge into waters of the United States must also obtain a water
7 quality certification from the state in which the action is proposed. The State of California uses its CWA
8 Section 401 certification authority to ensure Section 404 permits are consistent with state water quality
9 standards. A Water Quality Certification (or waiver thereof) from the SDRWQCB pursuant to Section
10 401 would be required for the proposed project.

11
12 CWA Section 303(d) requires states to identify impaired waterbodies and submit the list to the U.S. EPA
13 for review and approval. The list is known as the Section 303(d) list of impaired waters. The State Water
14 Quality Control Board and RWQCBs are required to monitor and assess water quality, prepare Section
15 303(d) lists, and develop total maximum daily load requirements.

16 17 **NPDES Municipal Separate Storm Sewer Permit**

18 Storm water runoff is often transported through Municipal Separate Storm Sewer Systems (MS4s) and
19 discharged, untreated, in local waterbodies. To prevent water quality degradation, MS4 operators must
20 obtain a NPDES permit and develop a stormwater management program. The SDRWQCB adopted Order
21 No. R9-2013-001, NPDES Permit and Waste Discharge Requirements for Discharges from the Municipal
22 Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region, on May 8,
23 2013 (SDRWQCB 2013). This regional permit regulates MS4 discharges to inland surface waters, bays,
24 estuaries, and coastal waters within the San Diego Region and covers 39 entities (jointly referred to as
25 Copermittees), including Orange County, San Juan Capistrano, and San Clemente (SDRWQCB 2013).

26
27 The NPDES MS4 permit requires the Copermittees to regulate construction project discharges to their
28 storm water conveyance systems using their municipal ordinance authority. As part of complying with
29 the permit, Copermittees must require all development projects to implement structural and low impact
30 development BMPs. Certain projects, such as redevelopment projects that create, add, or replace 5,000 or
31 more square feet of impervious surface on an already developed site, are considered “priority
32 development projects” (SDRWQCB 2013). Priority development projects are required to implement
33 more stringent structural BMPs than other development projects, and post-project runoff conditions must
34 not exceed pre-development runoff conditions by more than 10 percent.

35 36 **Oil Pollution Prevention**

37 40 CFR 112 requires owners and operators of certain facilities to prepare and implement a spill
38 prevention, control, and countermeasures (SPCC) plan to prevent any discharge of oil. Facilities that are
39 subject to SPCC plans are non-transportation-related facilities with an aggregate aboveground storage
40 capacity greater than 1,320 gallons or a completely buried storage capacity greater than 42,000 gallons
41 that could discharge into or upon navigable waters of the United States or adjoining shorelines. These
42 regulations require regulated facilities to establish related procedures, methods, and equipment standards
43 to prevent oil from reaching navigable waters and adjoining shorelines and to contain discharges of oil.
44 Substations with oil-filled electrical equipment above the threshold capacity are subject to these
45 requirements. Additionally, stationary oil-filled equipment with a capacity greater than or equal to 55
46 gallons must have secondary containment to ensure that oil spilled from primary containment systems is
47 prevented from impacting surface waters.

1 **4.9.2.2 State**

2
3 **California Fish and Game Code Section 1600**

4 The CDFW monitors streambed alteration to conserve, protect, and manage California’s fish, wildlife,
5 and native plant resources. California Fish and Game Code Section 1600 requires any person, state, or
6 local governmental agency or public utility to notify the CDFW before beginning any activity that would
7 substantially divert, obstruct, or change the natural flow of the bed, channel, or bank (including
8 associated riparian vegetation) of a river, stream, or lake and/or use material from, or deposit material
9 into, a streambed prior to commencement of the activity. Streams covered under this code include, but
10 are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line
11 streams, and watercourses with subsurface flow. If the CDFW determines that an action could have an
12 adverse effect on existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is
13 required. The proposed project may impact water resources and their associated riparian habitat;
14 therefore, this regulation is applicable to the proposed project.

15
16 **California Porter–Cologne Water Quality Control Act**

17 The State Water Resources Control Board regulates water quality through the Porter–Cologne Water
18 Quality Act of 1969 (California Water Code, Division 7), which contains a complete framework for the
19 regulation of waste discharges to surface water and groundwater of the state. The Act assigns
20 responsibility for implementing CWA Sections 401 (Water Quality Certification), 402 (NPDES), and
21 303(d) (List of Impaired Water Bodies) to the State Water Quality Control Board, which has delegated
22 authority to the nine RWQCBs. The proposed project falls under the jurisdiction of the SDRWQCB,
23 which is responsible for the implementation of federal and state water quality protection statutes,
24 regulations, and guidelines.

25
26 **4.9.2.3 Regional and Local**

27
28 **City of San Juan Capistrano**

29 **Grading Ordinance.** Section 9-2.323 of the City of San Juan Capistrano Municipal Code requires
30 preliminary grading plans to be submitted along with discretionary development applications. Prior to
31 issuance of a grading permit, grading plans must be reviewed by the City of San Juan Capistrano’s water
32 and engineering divisions and by the Orange County Fire Authority (City of San Juan Capistrano 2015a).
33 Grading plans are required to have City Grading Notes (City of San Juan Capistrano 2015b) and City
34 Erosion and Silt Control Notes (City of San Juan Capistrano 2015c), which include, among other things,
35 BMPs to maintain drainage patterns, protect adjacent properties from drainage problems, and protect
36 water quality.

37
38 **General Plan.** The City of San Juan Capistrano General Plan, Floodplain Management Element (City of
39 San Juan Capistrano 2002) establishes policies to support the goals of protecting life and property from
40 floodwaters and to preserve and enhance the natural character of creeks and their floodplains. Policies
41 established to support this goal include the following:

- 42
- 43 • **Floodplain Management Element Policy 1.1:** Limit development within the floodplain to
44 minimize risks to life and property and satisfy the flood insurance and other requirements of the
45 Federal Emergency Management Agency (FEMA).
 - 46 • **Floodplain Management Element Policy 1.2:** Prevent the placement of unauthorized fill
47 material in creeks and floodplains in order to avoid alteration of flow characteristics and bridge
48 scour.

- 1 • **Floodplain Management Element Policy 2.1:** Use environmentally sensitive treatments where
2 creek improvements are necessary to preserve wetlands.
- 3 • **Floodplain Management Element Policy 2.2:** Enhance and/or restore the creeks and their
4 floodplains as part of private development projects and public works projects.
5

6 **City of San Clemente**

7 **Grading Ordinance.** Section 15.36.050 through Section 15.36.420 of the San Clemente Municipal
8 Code detail the requirements of the City of San Clemente Grading Ordinance. The City's grading
9 ordinance requires erosion controls and water quality protection BMPs to be implemented for
10 development projects.

11
12 **General Plan.** The City of San Clemente General Plan, Natural Resources Element (City of San
13 Clemente 2014) establishes policies to support the goal of protecting and restoring significant plant and
14 wildlife species and habitats. Policies to accomplish this goal related to hydrology and water quality
15 include the following:

- 16
17 • **Natural Resources Policy NR-1.02(b):** In natural areas that are undeveloped or essentially so,
18 we require applicants for proposed projects to retain watercourses, riparian habitat, and wetlands
19 in their natural condition.
- 20 • **Natural Resources Policy NR-1.03(a):** We prohibit development and grading which alters the
21 biological integrity of sensitive habitats, including Riparian Corridors unless no feasible project
22 alternative exists which reduces environmental impacts to less than significant levels, or it is
23 replaced with habitat of equivalent value, as acceptable to the City Council. Where no
24 environmentally feasible alternative exists, development within Riparian Corridors shall avoid
25 removal of native vegetation; prevent erosion, sedimentation and runoff; provide for sufficient
26 passage of native and anadromous fish; prevent wastewater discharges and entrapment; prevent
27 groundwater depletion or substantial interference with surface and subsurface flows; and protect
28 and reestablish natural vegetation buffers.
29

30 **Orange County**

31 **Grading and Excavation Code.** The Orange County Grading and Excavation Code (County of Orange
32 1993) requires development projects to obtain a grading permit from the county prior to conducting any
33 grading or activities that are preparatory to grading (e.g., brushing or grubbing). Grading permits are also
34 required prior to altering an existing watercourse or channel. To obtain a grading permit, applicants are
35 required to submit erosion control plans that detail BMPs that will be implemented to protect drainage
36 patterns and water quality.
37

38 **General Plan.** The County of Orange General Plan, Resources Element (County of Orange 2005a)
39 establishes policies to support the goal of ensuring an adequate, dependable supply of water of acceptable
40 quality for all reasonable uses. Policies to accomplish this goal related to hydrology and water quality
41 include the following:

- 42
43 • **Water Resources Component Policy 1, Water Supply:** To ensure the adequacy of water
44 supply necessary to serve existing and future development as defined by the General Plan.

- 1 • **Water Resources Component Policy 5, Water Quality:** Protect and improve water quality
2 through continued management, enforcement, and reporting requirements.
3 Encourage an integrated water resources approach for stormwater management that considers
4 water supply, water quality, flood control, open space, and native habitats.
5 Promote coordination between the County, cities, and other stakeholders in the identification and
6 implementation of watershed protection and Low Impact Development (LID) principles.
7 Consider implementation of LID principles to conserve natural features (trees, wetlands, streams,
8 etc.), hydrology, drainage patterns, topography, and soils.
9 Encourage the creation, restoration, and preservation of riparian corridors, wetlands, and buffer
10 zones.
11 Continue to educate the public about protecting water resources.
- 12 • **Water Resources Component Policy 6, Intergovernmental Coordination:** To encourage and
13 support a cooperative effort among all agencies toward the resolution of problems and the
14 utilization of opportunities in the planning management and protection of water resources,
15 including water quality.

16
17 The County of Orange General Plan Land Use Element (County of Orange 2005b) establishes policies to
18 support the goal of guiding physical development within the county while protecting water quality
19 through required compliance with urban and stormwater runoff regulations. Policies established to
20 support this goal include the following:

- 21 • **Land Use Element Policy 13:** To guide physical development within the county while
22 protecting water quality through required compliance with urban and stormwater runoff
23 regulations.
24 Encourage, support, and require all new development and redevelopment projects to identify
25 opportunities for implementation of LID principles in the early stages of the development
26 planning process.
27 Promote, support, and require innovative site planning and development techniques that allow for
28 implementation of LID principles while taking into consideration specific hydrology and geology
29 conditions.
30 Encourage, support, and require the use of LID as part of an overall strategy to mitigate
31 stormwater impacts from new development and redevelopment projects consistent with current
32 NPDES permit requirements.
33 Encourage and support, where applicable, the use of buffer zones to protect natural water bodies,
34 including, but not limited to, wetlands and riparian corridors. Where infeasible, require other
35 measures to protect natural water bodies.
36 Identify and evaluate potential changes to land use development regulations to support and
37 promote stormwater management techniques and ensure regulations do not inhibit compliance
38 with current NPDES permit requirements.
39

1 **4.9.3 Impact Analysis**
2

3 **4.9.3.1 Methodology and Significance Criteria**
4

5 Potential impacts on hydrology and water quality were evaluated according to the following significance
6 criteria. The criteria were defined based on the checklist items presented in Appendix G of the CEQA
7 Guidelines. The proposed project would cause a significant impact on hydrology and water quality if it
8 would:
9

- 10 a) Violate any water quality standards or waste discharge requirements;
11 b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge
12 such that there would be a net deficit in aquifer volume or a lowering of the local groundwater
13 table level;
14 c) Substantially alter the existing drainage pattern of the site or area, including through the
15 alteration of the course of a stream or river, in a manner which would result in substantial erosion
16 or siltation on- or off-site;
17 d) Substantially alter the existing drainage pattern of the site or area, including through the
18 alteration of the course of a stream or river, or a substantial increase in the rate or amount of
19 surface runoff in a manner which would result in flooding on- or off-site;
20 e) Create or contribute to runoff water, which would exceed the capacity of existing or planned
21 storm water drainage systems or provide substantial additional sources of polluted runoff;
22 f) Otherwise substantially degrade water quality;
23 g) Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
24 h) Expose people or structures to a significant risk of loss, injury, or death involving flooding,
25 including flooding as a result of the failure of a levee or dam; or
26 i) Expose people or structures to a significant risk of loss, injury, or death involving inundation by
27 seiche, tsunami, or mudflow.
28

29 Appendix G of the CEQA Guidelines also includes the following checklist item:
30

- 31 • Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard
32 Boundary, Flood Insurance Rate Map, or other flood hazard delineation map.
33

34 No housing construction would occur as part of the proposed project. Therefore, this item is not applied
35 as a criterion for the analysis of environmental impacts.
36

1 **4.9.3.2 Applicant Proposed Measures**
2

3 The applicant has not committed to any applicant proposed measures that apply to hydrology and water
4 quality.
5

6 **4.9.3.3 Environmental Impacts**
7

8 **Impact WQ-1: Violate any water quality standards or waste discharge requirements.**
9 *LESS THAN SIGNIFICANT*

10
11 **Construction Impacts**

12 Construction of the proposed project would require ground-disturbing activities, such as grading for new
13 access roads, new transmission structure pads, and at the proposed San Juan Capistrano substation site,
14 and trenching for construction of underground segments of transmission line. Soil disturbance and
15 vegetation clearing could result in increased soil erosion, potentially resulting in sedimentation of
16 adjacent water bodies, violating water quality standards, and/or impacting beneficial uses. Sedimentation
17 of adjacent drainages could occur if precipitation events take place during active ground disturbing
18 activities or if water used for construction purposes (e.g., water for dust suppression or soil compaction)
19 runs off-site. In addition, mechanized equipment that requires fuels and lubricants would be used during
20 construction of the proposed project, and construction would also involve the fabrication of facilities that
21 require hazardous materials such as coatings, adhesives, and solvents. Accidental spills of these materials
22 could adversely affect water quality if these materials are spilled directly into surface water bodies or if
23 they are indirectly transported to surface water bodies in storm water or construction water runoff.
24

25 The proposed project would result in more than one acre of ground disturbance; therefore, the applicant
26 would be required to apply for coverage under the NPDES Construction General Permit to address storm
27 water discharges. The NPDES Construction General Permit requires development and implementation of
28 a SWPPP, which specifies BMPs to reduce or eliminate pollutants in storm water discharges from the site
29 during construction that would otherwise violate water quality standards. The NPDES Construction
30 General Permit would also require inspections, monitoring, and reporting to ensure that BMPs are
31 implemented and effective. If the BMPs are not effective, they must be modified to become more
32 effective. In addition to compliance with the NPDES Construction General Permit, the applicant would
33 implement applicable BMPs from the SDG&E Best Management Practices Manual for Water Quality
34 Construction (BMP Manual), which includes BMPs for sediment controls, waste management and
35 material controls, non-storm water discharge controls, and erosion control and soil stabilization (SDG&E
36 2011). The applicant would also be required to prepare and implement an SPCC plan to prevent oil spills
37 from impacting water quality.
38

39 Dewatering may be required during construction if localized shallow groundwater is encountered in
40 structure footings or other project excavations. Dewatering could result in a violation of water quality
41 standards if the water is discharged to surface water bodies and appropriate dewatering techniques are
42 not applied. The NPDES Construction General Permit would cover dewatering discharges, provided that
43 the discharges are infeasible to eliminate, comply with BMPs as described in the SWPPP, filter or treat
44 all dewatering discharges from sedimentation basins using appropriate technology, meet Numeric Action

1 Levels⁴ for pH and turbidity, and do not cause or contribute to a violation of water quality standards
2 (SWRCB 2009).

3
4 Water quality could also be impacted if fill material is required to be placed in drainages to facilitate
5 construction (e.g., grading or placing fill in drainage to improve an existing, or create a new, access
6 road). Although grading or placing fill material in creeks or drainages is not currently anticipated as part
7 of the proposed project, if it was later determined that doing so would be required to facilitate
8 construction, the applicant would be required to secure permits from all applicable regulatory agencies
9 prior to conducting any work in these areas. For impacts on Waters of the U.S., the proposed project
10 would be required to obtain a Section 404 permit from the USACE and a Section 401 permit from the
11 SDRWQCB certifying that the proposed activity will comply with state water quality standards.
12 Conditions placed on the issuance of the 401 certification become a part of the Section 404 permit, and
13 the Section 404 permit cannot be issued if Section 401 certification is denied. If the proposed project
14 would result in impacts on Waters of the State that are not also considered Waters of the U.S., the
15 proposed project would be required to secure a Waste Discharge Requirements permit from the
16 SDRWQCB.

17
18 By complying with the terms and conditions of any necessary permits, and implementing site-specific
19 BMPs and project design features, the proposed project would not violate any water standards during
20 construction. Therefore, construction of the proposed project would result in less than significant impacts
21 on water quality.

22 **Operations Impacts**

23
24 Operation of the proposed project would be similar to current operations and maintenance activities
25 within the proposed project area. Project operations would include patrol of the proposed project right-
26 of-way (ROW), inspection of transmission lines, and maintenance within proposed project substation
27 sites. Any future potential maintenance-related construction activities would be evaluated under
28 California Public Utilities Commission (CPUC) General Order 131-D and the California Environmental
29 Quality Act (CEQA), and any applicable permit requirements would ensure that water quality standards
30 are met.

31
32 The only expected discharges from the proposed project site during operations would be storm water. To
33 comply with the NPDES MS4 permit, each of the permittees must require the project applicant to submit
34 proof of the mechanism under which ongoing long-term maintenance of all structural BMPs would be
35 conducted (SDRWQCB 2013). The SWPPP would require post-construction BMPs, such as stabilization
36 and revegetation of disturbed areas, and erosion and sediment control devices would be maintained
37 during operations. Insulating mineral oil would be present in sealed electrical equipment, and secondary
38 containment sufficient to contain the entire volume of mineral oil in the event of an unanticipated spill
39 would be present. The applicant would also continue to implement the SPCC plan as well as internal
40 BMPs and standards to control containment of accidental spills. Therefore, potential impacts on water
41 quality during operations would be less than significant.

42
⁴ Numeric Action Levels are benchmark levels for certain parameters that, if exceeded during sampling, trigger the discharger to take action.

1 **Impact WQ-2:** **Substantially deplete groundwater supplies or interfere substantially with**
2 **groundwater recharge such that there would be a net deficit in aquifer**
3 **volume or a lowering of the local groundwater table level**
4 *LESS THAN SIGNIFICANT*
5

6 **Construction Impacts**

7 The applicant estimates that about 82 af of water would be used during construction of the proposed
8 project. Construction water demand is anticipated to be met with water secured through existing
9 municipal sources, such as the Municipal Water District of Orange County (MWDOC). Local water
10 supplies accommodate less than half of Orange County's water demand, and the MWDOC meets the
11 remaining demand by purchasing imported surface water from northern California and the Colorado
12 River (MWDOC 2014b). Groundwater would not be used during construction of the proposed project.
13

14 Dewatering may be required during construction where localized shallow groundwater is encountered.
15 Dewatering may result in temporary declines in groundwater levels, but the effects would be isolated to a
16 small area due to the short duration of pumping. Any wells in the vicinity of dewatering activities are
17 unlikely to be affected because water supply wells typically rely on deeper water-bearing zones than the
18 depth that an area would have to be dewatered.
19

20 Groundwater recharge occurs as surface water or precipitation is absorbed into soil and filters down into
21 a groundwater aquifer (USGS 1999). For the proposed project to interfere with groundwater recharge, it
22 would have to create impervious surfaces over an area with suitable soils for aquifer recharge or redirect
23 surface flows away from areas with suitable soils for aquifer recharge. The proposed project would
24 primarily use existing access roads and involve replacement of transmission structures along an existing
25 route. New access roads and transmission structure pads would not be paved; they would be stabilized to
26 allow infiltration and reduce runoff potential. Most of the work associated with construction of the
27 proposed project would take place in areas that do not overlay a groundwater basin. The only substantial
28 area of new impervious surface that overlays a groundwater basin would be the area associated with the
29 proposed San Juan Capistrano Substation. However, the majority of the existing substation site's storm
30 water drainage currently flows into city storm drains, and groundwater recharge at the site is likely
31 negligible under existing conditions.
32

33 Project construction would not cause substantial depletion of groundwater supplies or substantial
34 interference with groundwater recharge. Therefore, impacts under this criterion during construction of
35 the proposed project would be less than significant.
36

37 **Operations Impacts**

38 The proposed project would not use groundwater during operations, nor would any new areas of
39 impervious surface be introduced during operations. Therefore, there would be no impact on groundwater
40 supplies or groundwater recharge during operation of the proposed project.
41

42 **Impact WQ-3:** **Substantially alter the existing drainage pattern of the site or area,**
43 **including through the alteration of the course of a stream or river, in a**
44 **manner which would result in substantial erosion or siltation on- or off-site.**
45 *LESS THAN SIGNIFICANT*
46

47 Construction of the proposed project would require grading to accommodate construction at
48 approximately 23 transmission structure locations, at new spur road locations, at staging areas, limited
49 grading at some of the new distribution poles sites, and at the San Juan Capistrano substation site.

1 Grading would require vegetation removal and would temporarily increase erosion potential. Grading at
2 transmission structure locations would include up to 1,200 cubic yards of net cut to 800 cubic yards of
3 net fill, but would typically be in the range of less than 300 cubic yards of net cut to less than 200 yards
4 of net fill. The majority of new distribution poles would be placed immediately adjacent to existing
5 distribution structures, and work would occur at locations accessible via existing access roads.
6

7 To minimize the potential for erosion and sedimentation of water bodies, the proposed project would be
8 required to implement a SWPPP to comply with the NPDES Construction General Permit. The SWPPP
9 would require BMPs, including erosion and sedimentation controls. Erosion controls consist of source
10 control measures that are designed to prevent soil particles from detaching and being transported in storm
11 water runoff, such as straw mulch, geotextiles and mats, hydraulic mulch, hydroseeding, and velocity
12 dissipation devices. Sedimentation controls are structural measures intended to complement and enhance
13 the selected erosion control measures and reduce sediment discharges from active construction areas.
14 Examples of sediment control measures include silt fences, sediment traps, check dams, fiber rolls, gravel
15 bag berms, and sandbag barriers. In addition, the project would be required to comply with the
16 requirements of the SDRWQCB and South Orange County MS4 Permit requirements, which include
17 requirements for hydromodification control BMPs and project design features such as bioswales
18 paralleling access roads.
19

20 Alterations to the Talega substation would not change existing ground surface grades or runoff
21 conditions. Construction of the proposed San Juan Capistrano Substation would include changes to the
22 existing on-site grading and drainage, but the changes would not result in substantial erosion or siltation
23 on- or off-site. The grading plans for the proposed San Juan Capistrano Substation include new on-site
24 storm water control facilities including a series of inlets, culverts, and bioswales that would convey water
25 to bioretention facilities at the southwest corner of the substation property. Construction of the proposed
26 substation would also be required to comply with City of San Juan Capistrano grading requirements.
27

28 The proposed project does not include grading, placing fill, or any other activities in creeks or drainages
29 that would alter the flow of water. If final designs of the proposed project would require grading or the
30 placement of fill material within creeks or drainages, the applicant would be required to secure all
31 applicable permits from the USACE, SDRWQCB, and CDFW prior to conducting any work within those
32 drainages. Such permits would require mitigation for the placement of fill in drainages, and other
33 measures would be required to ensure that the drainages are not impacted, including through
34 sedimentation, beyond the permitted use.
35

36 As a result of complying with all applicable laws and permit requirements, the proposed project would
37 not substantially alter the existing drainage pattern of the site in a manner that would result in substantial
38 erosion or siltation on- or off-site. Therefore, impacts under this criterion would be less than significant.
39

40 **Impact WQ-4: Substantially alter the existing drainage pattern of the site or area,**
41 **including through the alteration of the course of a stream or river, or**
42 **substantially increase the rate or amount of surface runoff in a manner**
43 **which would result in flooding on- or off-site.**
44 *LESS THAN SIGNIFICANT*
45

46 Construction of the proposed project would require limited grading to create new spur roads, level
47 construction work areas at some of the transmission structure and distribution pole sites, at some of the
48 staging areas and stringing sites, and at the San Juan Capistrano Substation site. Because construction of
49 the proposed project would take place along existing rights-of-way and primarily use existing access
50 roads, the amount of grading required would be minimal. New permanent access roads and graded pads

1 would not be paved and would be stabilized in a manner that allows infiltration and reduces runoff
2 potential. Although grading would result in minor localized changes in runoff volumes, the proposed
3 project would be designed to return runoff to existing drainages patterns. The proposed project would not
4 alter the course of any creeks or drainages.
5

6 Construction of the proposed San Juan Capistrano Substation would include changes to the existing
7 onsite grading and drainage, but the changes would not result in a substantial increase in the rate or
8 amount of surface runoff. The grading plans for the new substation include new on-site storm water
9 control facilities including a series of inlets, culverts, and bioswales that would convey water to
10 bioretention facilities at the southwest corner of the substation property. The bioretention facilities would
11 have a controlled discharge to the existing 57-inch storm sewer located under Camino Capistrano. There
12 would be no additional sheet flow runoff from the site to the curb and gutters on Camino Capistrano.
13

14 The proposed project would incorporate SWPPP BMPs to minimize erosion that could cause
15 sedimentation and loss of receiving water capacity. Therefore, after compliance with applicable laws and
16 permit conditions, impacts under this criterion would be less than significant.
17

18 **Impact WQ-5: Create or contribute runoff water which would exceed the capacity of**
19 **existing or planned storm water drainage systems or provide substantial**
20 **additional sources of polluted runoff.**
21 *LESS THAN SIGNIFICANT*
22

23 Project construction ~~would generate storm water runoff and~~ runoff from dust control activities and
24 storm water runoff from the construction site would occur during adequate precipitation events.
25 However, the proposed project would not significantly alter the existing drainage patterns of the site as
26 discussed under Impacts WQ-3 and WQ-4. Existing drainage facilities would be used, upgraded, or
27 replaced. New access roads and transmission structure pads would be constructed such that the natural
28 drainage direction is maintained, and runoff velocity dissipation devices such as water bars and gravel
29 bag berms would be employed to control the rate at which runoff enters drainage systems. Construction
30 of the proposed project would not result in a substantial increase in the amount of impervious surfaces,
31 and runoff volumes are anticipated to be roughly the same as current conditions. The only area of
32 substantial (i.e., greater than one acre) new impervious surface would be a location associated with the
33 increased concrete pad area at the proposed San Juan Capistrano Substation site. However, the project
34 would include design features, such as an above ground retention pond, and bioretention facilities, such
35 as open water quality basins and/or subsurface vaults, to provide flow duration control of the site runoff.
36

37 The proposed project would also be required to comply with all applicable county and city grading
38 ordinances, which would require project designs to be reviewed and approved prior to construction. To
39 be approved, the plans would have to demonstrate that the existing and planned storm water drainage
40 systems are capable of receiving the anticipated runoff volumes from the proposed project. In addition,
41 the proposed project would be required to implement BMPs as part of the SWPPP to reduce the potential
42 for polluted runoff leaving the site. Therefore, impacts under this criterion would be less than significant.
43

44 **Impact WQ-6: Substantially degrade water quality.**
45 *LESS THAN SIGNIFICANT WITH MITIGATION*
46

47 During construction of the proposed project, potential contaminants could be released, including oil,
48 gasoline, diesel motor fuel, industrial solvents, and other chemicals necessary for project construction.
49 Water quality could also be affected if by-products associated with paving operations, saw cutting,
50 coring/drilling, or mixing/applying concrete come are transported off-site in runoff. However, as

1 discussed above, the applicant would be required to implement a SWPPP that includes BMPs to reduce
2 or prevent construction-related pollutants from contaminating runoff and degrading water quality on- or
3 off-site. In addition to BMPs related to erosion and sediment control, the SWPPP would also include
4 BMPs to address activities that could indirectly introduce contaminants to surface water runoff from the
5 site. The applicant would also comply with its BMP Manual (SDG&E 2011), which includes BMPs to
6 prevent construction-related contaminants from reaching water bodies, such as drain inlet protection and
7 secondary containment around oil and chemical storage.

8
9 Damage to an inadequately plugged and abandoned well could create a significant hazard to public
10 health, underground and surface waters, or oil or gas reservoirs. Table 4.8-5 (see Section 4.8, “Hazards
11 and Hazardous Materials”) identifies the oil, gas, and geothermal wells within 1,000 feet of the proposed
12 project. The closest well to the proposed project is an abandoned well located approximately 300 feet
13 west of a laydown area on Calle Saluda near Transmission Line Pole 31. Based on the dates of the final
14 abandonment letters filed with the California Department of Conservation, Division of Oil, Gas, and
15 Geothermal Resources (DOGGR) (1978 and 1983), the wells listed in Table 4.8-5 were capped to
16 relatively recent standards. DOGGR considers the potential risk to damage the wells listed in Table 4.8-5
17 to be low based on capping history and proximity of the wells to the proposed project (Andrews 2014).
18 In the event that an unanticipated well is discovered during construction, damage to life, health, and
19 property could be significant. Implementation of MM HAZ-5 would reduce potential impacts to less than
20 significant by requiring construction workers to cease work within 50 feet of an unanticipated well
21 discovery until authorized by DOGGR. The potential for the proposed project to damage a well is less
22 than significant.

23
24 If pesticides are used and applied in excessive amounts or applied improperly, impacts related to
25 degradation of water quality could be significant. Implementation of MM WQ-1 would reduce potential
26 impacts to less than significant by requiring pesticide application to be in accordance with Federal
27 Insecticide, Fungicide, and Rodenticide (FIFRA) labels, personnel applying the pesticides to be properly
28 trained and certified, pesticide application to not occur 24 hours prior to a likely precipitation event, and
29 only approved pesticides to be used.

30
31 Compliance with all applicable laws and permits and implementation of MM WQ-1 and MM HAZ-5
32 would reduce impacts from the proposed project under this criterion to less than significant.

33
34 **Impact WQ-7: Place within a 100-year flood hazard area structures that would impede or**
35 **redirect flood flows.**
36 *LESS THAN SIGNIFICANT*

37
38 Transmission Line Poles 9 and 10 would be installed within the 100-year flood hazard area of San Juan
39 Creek. Transmission Line Pole 9 would be located near the northern edge of the flood hazard zone, and
40 Transmission Line Pole 10 would be located south of San Juan Creek in a developed area within the
41 floodplain. The foundations of these structures would be designed to withstand flood flows, and given
42 the circular shape of the above ground portion of the structures and small diameter (5 to 6 feet), the
43 structures would not impede or redirect flood flows if inundated. No other project components would be
44 located within a 100-year flood hazard area. Therefore, any potential impacts under this criterion would
45 be less than significant.

1 **Impact WQ-8: Expose people or structures to a significant risk of loss, injury, or death**
2 **involving flooding, including flooding as a result of the failure of a levee or**
3 **dam.**
4 *LESS THAN SIGNIFICANT*
5

6 The proposed project crosses the 100-year flood hazard areas of Horno Creek, San Juan Creek, Prima
7 Deshecha Creek, and Segunda Deshecha Creek. The proposed project would generally span these areas;
8 however, Transmission Line Poles 9 and 10 would be installed within the 100-year flood hazard zone of
9 San Juan Creek, and existing access roads would be used for construction and operations that cross the
10 100-year flood hazard zones of San Juan Creek, Prima Deshecha Creek, and Segunda Deshecha Creek.
11 Transmission Line Poles 9 and 10 are also within the predicted dam inundation area in the event that the
12 Trampas Canyon Dam fails. However, the predicted inundation area is similar to that associated with the
13 100-year flood hazard area of San Juan Creek (City of San Juan Capistrano 1999); therefore, the
14 transmission structures being located within the dam inundation area is inconsequential.
15

16 The proposed project does not involve development of facilities that would be occupied regularly.
17 Construction workers would need to be within the 100-year flood hazard zone/dam inundation zone of
18 San Juan Creek during the removal of two existing 138-kV transmission structures and construction of
19 Transmission Line Poles 9 and 10. Additionally, construction and operations personnel would
20 periodically travel through the flood hazard zones of Prima Deshecha Creek and Segunda Deshecha
21 Creek. However, construction and operations personnel would be within these areas for short durations,
22 and relocation out of these areas could be attained very quickly in the event of a flood. Structures located
23 within the 100-year flood hazard zone of San Juan Creek would be designed to withstand potential flood
24 inundation to comply with CPUC General Order 95 (Rules for Overhead Electric Line Construction) and
25 the California Building Standards Code. Therefore, impacts under this criterion risk to people or
26 structures would be less than significant.
27

28 **Impact WQ-9: Expose people or structures to a significant risk of loss, injury, or death**
29 **involving inundation by seiche, tsunami, or mudflow.**
30 *LESS THAN SIGNIFICANT*
31

32 A seiche is a standing wave of water on a river, lake, pond, gulf, or bay caused by an earthquake. A
33 tsunami, or tidal wave, is a wave of water on the ocean caused by an undersea earthquake. There are no
34 bodies of water in the vicinity of the proposed project that could generate a seiche in the event of an
35 earthquake. The Pacific Ocean is more than 3 miles from the nearest project component, and the entire
36 project is located well outside of mapped tsunami inundation areas (CDC 2009a, 2009b, 2009c).
37 Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury,
38 or death by seiche or tsunami.
39

40 A mudflow is a downhill movement of soft, wet earth and debris caused by a rapid and heavy
41 accumulation of rain or snowmelt in areas. Mudflows usually begin on steep hillsides as shallow
42 landslides that liquefy. Transmission Line Segments 2 and 3 would be located in hilly terrain that may be
43 susceptible to mudslide. However, prior to the start of construction, the applicant would conduct a
44 geotechnical study to evaluate the physical properties of the soils, geology, and slope stability at the new
45 transmission structure sites near a mapped landslide or other unstable slope condition, consistent with
46 APM GEO-2 (see Section 4.6, "Geology, Soil, and Mineral Resources"). The results of the geotechnical
47 study would be incorporated into final engineering designs for transmission structure foundations. If
48 necessary, retaining walls and other slope stability controls would be implemented to reduce the potential
49 for mudflow. Temporary work areas would be stabilized and revegetated, and the applicant would
50 implement BMPs from its BMP Manual, and as required by the SWPPP, that would further reduce the

1 potential for mudflow. The proposed project would be built in compliance with CPUC General Order 95
2 and the California Building Standards Code to address local conditions. Construction and operations
3 personnel would only be in areas susceptible to mudflow for short durations ~~and would not be on site~~
4 ~~during precipitation events substantial enough to initiate a mudflow.~~ Therefore, ~~potential impacts under~~
5 ~~this criterion~~ risk to people or structures would be less than significant.

6 7 **4.9.4 Mitigation Measures**

8
9 **MM WQ-1: Pesticide Application.** If pesticides are used during construction or operations, they shall
10 be applied in accordance with Federal Insecticide, Fungicide, and Rodenticide (FIFRA) labels.
11 Applicators shall be appropriately trained and shall be certified by the California Department of Pesticide
12 Regulation. Prior to any use of pesticides, the type of pesticides proposed for use shall be approved by
13 the CPUC. Prior to each pesticide application the national weather service (forecast.weather.gov) shall be
14 consulted, and no pesticides shall be applied if the chance of rain exceeds 70 percent within 24 hours of
15 the proposed application time and location. Records of type and amount of pesticides used and locations
16 of application shall be kept and submitted to the CPUC on a monthly basis during construction.

17
18 Mitigation measure MM HAZ-5 is detailed in Section 4.8, “Hazards and Hazardous Materials.” No other
19 mitigation measures are associated with impacts on Hydrology and Water Quality.