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FINAL
Environmental Impact Statement

Southern California Edison's
West of Devers Upgrade Project

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VOLUME 2
Sections D.10 through K

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Contents of Volume 2

Tables

Figures

D.10 Hazards and Hazardous Materials

This section describes the affected environment for Hazards and Hazardous Materials in Section D.10.1 and presents the relevant regulations and standards in Section D.10.2. Sections D.10.3 through D.10.5 describe the impacts of the Proposed Project and the alternatives. Section D.10.6 presents the mitigation measures and mitigation monitoring requirements, and D.10.7 lists references cited.

D.10.1 Environmental Setting / Affected Environment

D.10.1.1 Regional Setting and Approach to Data Collection

This section addresses the environmental setting and approach to data collection related to the construction and operation of the Proposed Project with regard to the issues of environmental contamination and hazardous materials. Sites with known and potential contamination along or near the proposed transmission line route were researched to better define the areas where hazardous waste contaminated sites may impact construction activities. The primary reason to define potentially hazardous sites is to protect worker health and safety and to minimize public exposure to hazardous materials during construction and waste handling. If encountered, contaminated soil may qualify as hazardous waste requiring handling and disposal according to local, State, and federal regulations.

The proposed route traverses land with a variety of uses, including open-space, rural and suburban residential housing, commercial businesses, and minor agricultural. Existing and past land use activities are used as potential indicators of hazardous material storage and use. For example, many current and historic industrial and defense sites have soil or groundwater contamination by hazardous substances. Other hazardous materials sources include leaking underground tanks in commercial and rural areas, contaminated surface runoff from polluted sites and orchards, and contaminated groundwater plumes that may exist along the transmission line route. However, review of the project environmental database (SCE, 2013, Appendix G) and online environmental databases indicates there are no known active hazardous waste sites on or within 1,000 feet of the project right-of-way (ROW). Online databases reviewed are as follows:

- Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) databases (U.S. EPA, 2014)
- California State Water Resources Control Board (SWRCB) Geotracker (SWRCB, 2014)
- California Department of Toxic Substance Control (DTSC) databases (DTSC, 2014)

D.10.1.2 Environmental Setting by Segment

Based on the online environmental database review described in Section D.10.1.1, there are no known hazardous release sites within the Proposed Project ROW in the West of Devers segment. However, unknown contamination could be present within the ROW due to past and current property uses in the vicinity. The sections below provide general descriptions of the existing uses in the vicinity of the ROW as related to the potential for environmental contamination.

D.10.1.2.1 Segment 1: San Bernardino

The segment from San Bernardino Substation to San Bernardino Junction traverses a mix of industrial/warehouse, commercial, and residential properties, as well as undeveloped open space and agricultural land. Based on the presence of agricultural activities within the SCE ROW and local industrial land use activities, there is a potential for soil to be encountered along this route that contains pesticides, herbicides and previously unknown industrial contaminants (solvents, hydrocarbons, heavy metals). The former Norton Air Force Base and Superfund cleanup site is located on the north side of the Santa Ana River. The former base landfill is located approximately 0.6 miles north of the Proposed Project and across the river. It received cleanup closure in 2008 (SCE, 2013, Appendix G) and is unlikely to impact project construction at the south side of the San Bernardino Substation.

D.10.1.2.2 Segment 2: Colton and Loma Linda

The Vista Substation to San Bernardino Junction route segment crosses primarily undeveloped open space and passes adjacent to several residential developments. From Vista Substation, the route segment crosses the State Route 215 ROW passing through a recreational vehicle sales property and undeveloped properties before entering Vista Substation. In addition to crossing State Route 215, the route segment crosses unpaved roads in the hills and some paved residential streets. From State Route 215 to east of Reche Canyon Road, the transmission line route would pass through and adjacent to older residential neighborhoods and open space. The route passes through new residential developments between Reche Canyon Road and Prado Lane in Colton before entering undeveloped hills and valleys. Based on the open space and residential land uses along the San Vista Substation to Bernardino Junction segment, there is very low potential to encounter contaminated soil.

D.10.1.2.3 Segment 3: San Timoteo Canyon

The San Timoteo Canyon segment of the transmission line route crosses primarily through undeveloped open space land and a few scattered rural residential and farm properties before reaching the El Casco Substation. This segment parallels and crosses unpaved powerline access roads, two paved rural roads, the paved San Timoteo Landfill access road, and several unpaved private rural roads. The route segment traverses undeveloped slopes and hills on the south side of San Timoteo Canyon but locally passes through developed land uses primarily consisting of ranches and ranch facilities, groves, and other farmland. The intervening land consists of undeveloped grassy hill slopes and ridges. Although there are orchards and farmland, most of the planned transmission structure sites are on ridge tops that largely avoid the agricultural areas, resulting in only a few locations where there is potential for residual pesticide and herbicide in the soil in existing groves and farmed areas. Former and historic underground fuel tanks at two farms are more than 700 feet from the alignment and not likely to affect project construction. About eight new transmission structures are proposed about 1,100 feet north of and downslope of the San Timoteo Landfill. The proposed locations are located on elevated ridges and are not directly downgradient of the local groundwater flowpath. The depth of groundwater (>250 feet) and horizontal separation from the landfill, which is actively recovering landfill gas (Geo-Logic Associates, 2012), should result in transmission structure foundation excavations that are not affected by landfill gas or groundwater. The remaining parts of this segment are free of land use activities that would potentially result in soil or groundwater contamination.

D.10.1.2.4 Segment 4: Beaumont and Banning

The Beaumont and Banning segment of the proposed route crosses through a mix of undeveloped land, low-density residential development, and more dense residential areas. From El Casco Substation to Interstate 10 the route traverses undeveloped hills adjacent to dense residential developments. This segment of the alignment parallels and crosses unpaved transmission line access roads, and crosses paved residential streets and San Timoteo Canyon Road (Oak Valley Parkway). Through the City of Beaumont the route segment traverses residential areas, a golf course, and parks to Cherry Avenue, then crosses through undeveloped hills and gently sloping alluvial fan surfaces with pockets of residential development located south of the route and extending across the central part of the City of Banning. This segment of the alignment crosses several major streets and paved residential streets in Beaumont, then parallels and crosses unpaved transmission line access roads before reaching the cemetery on North San Gorgonio Avenue. Based on current and historic land uses, in particular the lack of commercial, industrial, and agricultural uses, the Banning and Beaumont segment has a low potential to encounter contaminated soil.

D.10.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

The Morongo Tribal Lands segment extends from the east border of Banning to Rushmore Avenue and crosses a mix of undeveloped land and scattered rural residential areas. This segment of the proposed route crosses an active gravel quarry and San Gorgonio River wash before extending north of the Desert Hills Outlet Center. East of the Outlet Center the proposed route traverses undeveloped land and parallels and crosses unpaved powerline access roads before passing just south of the residential area at the east boundary of the Morongo Tribal Land. Based on land uses along the Morongo Tribal Lands and Surrounding Areas segment, particularly the lack of commercial, industrial, and agricultural uses, there is low potential for the project to encounter contaminated soil. A former leaking underground fuel tank at the gravel quarry received case closed status in 1992. A former leaking underground fuel tank at the San Gorgonio Memorial Park received case closed status in 2000. Both of these leaking tank sites had soil-only contamination, are more than 500 feet from the nearest transmission structure construction site, and are located down slope from the project. These tank sites are not anticipated to affect construction of the project.

D.10.1.2.6 Segment 6: Whitewater and Devers

The Whitewater to Devers Substation segment of the proposed route crosses predominantly undeveloped land with some residential areas in San Gorgonio. The route crosses and parallels numerous unpaved powerline access roads and then crosses State Route 62. To the west of Devers Substation, the route passes land occupied by wind energy farms and a pocket of scattered rural residences on both sides of State Route 162. The Whitewater River is crossed approximately 2 miles west of State Route 162. Based on land uses along the Whitewater and Devers segment, particularly the lack of commercial, industrial, and agricultural uses, there is low potential for the project to encounter contaminated soil.

D.10.1.3 Environmental Setting for Connected Actions

Common to All Areas. Existing and past land use activities are potential indicators of hazardous materials and hazardous waste storage and use. The primary reasons to define potentially hazardous sites are to protect the health and safety of construction and operations personnel and to minimize public exposure to hazardous materials during construction and waste handling. Sources of hazardous materials include hazardous or toxic materials associated with accidental spills, purposeful illegal dumping, and other uncontrolled discharges into the environment.

Examples of contamination that could result in areas of hazards and hazardous materials, include diesel leakage from failure of a truck's fuel pump, improper disposal of paint cans, and even leaching of chemicals from abandoned mines and mining equipment. Additionally, there may be areas where pollution is being or has been cleaned up under federal, State or locally funded programs. Due to the presence of former military lands in some areas, sites may contain unexploded ordnance or exploded ordnance residue from munitions training exercises. In areas where agriculture has been or is practiced, there is the potential for residue from application or spills of pesticides and herbicides.

Desert Center Area. The Desert Center area includes BLM administered lands in Riverside County. The nearest populated areas include the unincorporated town of Desert Center, the Lake Tamarisk Park development, and Eagle Mountain Village. The nearest incorporated population centers include Blythe, Coachella, and Indio in Riverside County, and Twentynine Palms in San Bernardino County.

As described in Section B.7, the proposed Palen Solar Power and Desert Harvest Solar Projects as well as two other solar PV projects would be located in the Desert Center area. The Phase I Environmental Site Assessment conducted for the Palen Solar Power Project found no evidence or record of any use, spillage, or disposal of hazardous substances on the site, nor was there any other environmental concern that would require remedial action. Similarly, no evidence or record of any use, spillage, or disposal of hazardous substances was found within the Desert Harvest Solar Project site. However, a Phase I Environmental Site Assessment conducted for a project adjacent to the Desert Harvest Solar Project indicated that the project area was possibly used historically as a military training facility and that there is some potential for munitions and explosives of concern to be present on site. Similar site conditions are expected for the solar PV projects, depending on their location.

Blythe Area. The Blythe area includes BLM administered lands as well as private undeveloped and agricultural lands in eastern Riverside County. Within this general area, the types of hazardous materials used and types of hazardous material sites and hazards are similar to those described above for all areas.

D.10.2 Applicable Regulations, Plans, and Standards

Hazardous substances are defined by federal and State regulations in order to protect human health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous substances are defined in CERCLA Section 101(14), and also in the California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261, which provides the following definition:

> *A hozordous moteriol is o substonce or combinotion of substances which, becouse of its quontity, concentrotion, or physical, chemicol or infectious chorocteristics, moy either (1) couse, or significontly contribute to, on increase in mortolity or on increose in serious irreversible, or incopocitoting reversible, illness; ar (2) pose o substontiol present or potential hozord to humon heolth or environment when improperly treoted, stored, tronsported or disposed af, or otherwise monoged.*

For this analysis, soil that would be excavated from a site containing hazardous materials would be considered to be a hazardous waste if it exceeds specific CCR Title 22 criteria, or on federal lands, if it exceeded criteria defined in CERCLA or other relevant federal regulations. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials would be performed; it may also be required if certain other activities are proposed. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction

D.10.2.1 Federal

Clean Water Act

The Federal Clean Water Act (CWA) is the principal Federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States (U.S.). Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The United States Environmental Protection Agency (EPA) implements provisions of the CWA through a variety of regulations, including the National Contingency Plan (NCP) and the Oil Pollution and Prevention Regulations. Implementation of the CWA is the responsibility of each state.

Toxic Substances Control Act and the Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Resource Conservation and Recovery Act

RCRA (40 C.F.R. Parts 239–282), which amended the Solid Waste Disposal Act (42 U.S.C. Section 6901 et seq.), establishes a framework for the proper management of hazardous and nonhazardous solid waste. This act, along with the Toxic Substances Control Act of 1976, enacted a program administered by the EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes from their creation to disposal. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the HSWA. RCRA focuses on active and future facilities; it does not address abandoned or historical sites, which are managed under CERCLA.

In 1992 the EPA authorized the Department of Toxic Substances Control (DTSC) to implement the RCRA program in California.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 U.S.C. § 2601 et seq.) was enacted by Congress to give the EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. The EPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental human-health hazard. It can ban the manufacture and import of those chemicals that pose an unreasonable risk.

Oil Pollution and Prevention Regulation

The goal of the oil pollution prevention regulation in 40 C.F.R. Part 112 is to prevent oil discharges from reaching navigable waters of the U.S. or adjoining shorelines. The rule was also written to ensure effective responses to oil discharges. The rule further specifies that proactive, and not passive, measures be used to respond to oil discharges. The oil pollution regulation contains two major types of requirements: prevention requirements (Spill Prevention Countermeasures, and Control Rule ((SPCC Rule)) and Facility Response Plan (FRP) requirements. The SPCC rule requires facilities that could reasonably be expected to discharge oil in quantities that may be harmful into navigable waters to develop and implement SPCC plans. The EPA amended the SPCC Rule in 2006 to extend the SPCC compliance dates in Sections 112.3(a), (b), and (c) for all facilities until October 31, 2007. SPCC plans must be prepared, certified (by a professional engineer), and implemented by facilities that store, process, transfer, distribute, use, drill, produce, or refine oil or oil production.

Hazard Management and Resource Restoration Program

The Hazard Management and Resource Restoration (HMRR) program is administered by the BLM. Its mission is to protect lives, resources, and property, and to improve the health of landscapes and watersheds by: minimizing the environmental contamination on public lands; reducing and eliminating risk associated with physical and environmental hazards; restoring resources affected by oil discharges and hazardous release; and administering CERCLA assessments.

D.10.2.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act ("Porter-Cologne") (California Water Code § 13000 et seq.) is a State law that provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designated the State Water Resources Control Board (SWRCB) as the ultimate authority over State water rights and water quality policy and established nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality on a day-to-day basis at the local/regional level. The RWQCBs have the responsibility of granting National Pollutant Discharge Elimination System (NPDES) permits for stormwater runoff from construction sites.

California Environmental Protection Agency (Cal-EPA)

The Cal-EPA was created in 1991. It centralized California's environmental authority, consolidating Air Resources Board (ARB), State Water Resources Control Board (SWRCB), Integrated Waste Management Board (IWMB), Department of Toxic Substance Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal-EPA "umbrella" to create a cabinet-level advocate for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Its mission is to restore, protect and enhance the environment, and to ensure public health, environmental quality, and economic vitality. The DPR, DTSC, IWMB, and SWRCB regulate hazardous materials and hazardous waste that have the potential to cause soil, water, and groundwater contamination, and their missions are summarized below.

- **Department of Pesticide Regulation.** The Department of Pesticide Regulation has the primary responsibility for regulating all aspects of pesticide sales and use to protect the public health and the environment. The Department's mission is to evaluate and mitigate impacts of pesticide use, maintain the safety of the pesticide workplace, ensure product effectiveness, and encourage the development and use of reduced risk pest control practices while recognizing the need for pest management in a healthy economy.

- **Department of Toxic Substances Control.** The DTSC mission is to restore, protect, and enhance the environment, and to ensure public health, environmental quality and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.
- **Integrated Waste Management Board.** The mission of the IWMB is to protect the public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal.
- **State Water Resources Control Board.** The SWRCB mission is to preserve and enhance the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.

Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) is a department of Cal-EPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 (RCRA) and, the California Health and Safety Code, primarily Division 20, Chapters 6.5 through 10.6, and Title 22 (Social Security), Division 4.5. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Government Code §65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, California Department of Public Health (CDPH) lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists form local regulatory agencies of sites that have had a known migration of hazardous waste/material.

California Office of Emergency Services (OES)

In order to protect the public health and safety and the environment, the OES is in charge of establishing and managing statewide standards for business and area plans relating to the handling and release or threatened release of hazardous materials. Basic information on the location, type, quantity, and the health risks of hazardous materials handled, used, stored, or disposed of in the state, which could be accidentally released into the environment, needs to be available to firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, and other interested parties. The information provided by business and area plans is necessary in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of hazardous materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code Article 1 – Hazardous Materials Release Response and Inventory Program (Sections 25500-25520) and Article 2 – Hazardous Materials Management (Sections 25531-25543.3).

CCR Title 19, Public Safety, Division 2, Office of Emergency Services, Chapter 4 – Hazardous Material Release Reporting, Inventory, And Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for Hazardous Materials Business Plans (HMBPs). These plans shall include the following: (1) a hazardous material inventory in accordance with Sections 2729.2–2729.7; (2) emergency response plans and procedures in accordance with Section 2731; and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- hazardous compressed gas in any amount
- hazardous waste in any quantity

California Occupational Safety and Health Administration (Cal-OSHA)

The California Occupational Safety and Health Administration (Cal-OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal-OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Title 8, Code of California Regulations [CCR], Sections 337 340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

Title 8 CCR, Chapter 4, Subchapter 7, Group 14 and 15, and Group 16, Articles 107, 109, and 110 sets forth the Permissible exposure limit (PEL), the exposure, inhalation or dermal permissible exposure limit for numerous chemicals. Included are chemicals, mixture of chemicals, or pathogens for which there is statistically significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees.

It is the responsibility of the Cal-OSHA to ensure compliance with the provisions of the Hazard Communication Standard. California Labor Code Sections 6360 through 6399.7 and Title 8 California Code of Regulations Sections 5191 and 5194 are intended to ensure that both employers and employees understand how to identify potentially hazardous substances in the workplace, understand the health hazards associated with these chemicals, and follow safe work practices. This is accomplished by preparation of a Hazard Communication Plan.

Office of Environmental Health Hazard Assessment (OEHHA)

Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted as a ballot initiative in November 1986. The Proposition was intended by its authors to protect California citizens and the State's drinking water sources from chemicals known to cause cancer, birth defects, or other reproductive harm, and to inform citizens about exposures to such chemicals. Proposition 65 requires the Governor to publish, at least annually, a list of chemicals known to the State to cause cancer or reproductive toxicity. OEHHA has established safe harbor levels (levels of exposure that trigger the warning requirement) for some, but not all, listed chemicals. Businesses that cause exposures greater than the safe harbor level must provide Proposition 65 warnings. These safe harbor levels are available in the October 2007 Status Report available at http://www.oehha.ca.gov/prop65/pdf/October2007StatusRpt.pdf. If there is no safe harbor level for a chemical, businesses that knowingly expose individuals to that chemical would generally be required to provide a Proposition 65 warning, unless the business could show that risks of cancer or reproductive harm resulting from the exposure would be below levels specified in Proposition 65 and its accompanying regulations.

D.10.2.3 Local

Certified Unified Program Agency

The Certified Unified Program Agency (CUPA) is the agency certified by the DTSC to conduct the Unified Program at the local level. The program consists of hazardous waste generator and on-site treatment programs, aboveground and underground storage tank programs, Hazardous Materials Management, Business Plans, and Inventory Statements, and the Risk Management and Prevention Program.

County of Riverside Certified Unified Program Agency

The County of Riverside CUPA is responsible for administering the hazardous materials program for the County for Riverside, as well as the cities of Banning, Beaumont, Calimesa, and Palm Springs.

San Bernardino County

The San Bernardino County Fire Department (SBCFD), Hazardous Materials Division (HMD) is the certified unified program agency (CUPA) responsible for administering the hazardous materials program within San Bernardino County. San Bernardino County Solid Waste Management Division of the Department of Public Works conducts regular inspection and methane gas monitoring at the closed and active landfills in the county.

D.10.3 Environmental Impacts of the Proposed Project

This section presents discussion of impacts and mitigation measures for Proposed Project related to hazardous material handling and storage, accidental spills, and encountering known and unknown pre-existing soil contamination. Construction impacts and operational impacts are addressed.

D.10.3.1 Approach to Impact Assessment

The principal environmental impact involving hazardous waste associated with the Proposed Project would relate to the potential mobilization of contaminants resulting in exposure of workers and the general public (e.g., excavation and handling of contaminated soil). Hazardous materials in the construction area may require special handling as toxic substances and hazardous waste can create an exposure risk to workers and the general public due to spills or upset or from excavation and transport.

Toxic substances may cause short-term or long-lasting health effects. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances are hazardous because of their flammable properties. Gasoline, hexane, and natural gas are examples of ignitable substances. Corrosive substances are chemically active and can damage other materials or cause severe burns upon contact. Examples include strong acids and bases such as sulfuric (battery) acid or lye. Reactive substances may cause explosions or generate gases or fumes. Explosives, pressurized canisters, and pure sodium metal (which reacts violently with water) are examples of reactive materials.

Soil that is excavated from a site would be a hazardous waste if it exceeds specific CCR Title 22 criteria. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials is performed. Contaminated soil exceeding regulatory limits for construction backfill would require onsite treatment or transport to offsite processing facilities. Contaminated soil removed from the construction area must be transported according to State and federal regulations and be replaced by import soil approved for backfill. Similar issues pertain to contaminated groundwater. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies with jurisdictional authority. Cleanup requirements would be determined on a case-by-case basis by the agency taking lead jurisdiction.

Although no known contaminated sites with potential to impact the project were identified in this review, it is possible that previously unknown contaminated sites could be discovered during construction of the project. Contamination of soils may exist in the agricultural, commercial, and light industrial land use areas of the project area due to offsite migration of pollutants, unauthorized dumping, and historic unreported hazardous materials spills.

D.10.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures (APMs) related to hazardous materials, and no APMs for other resources are referenced in this section.

D.10.3.2 Impact Criteria

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). Using the following criteria for the purposes of analysis, the project or an alternative would impact hazards and hazardous materials if project construction or operation would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The routine storage and use of hazardous materials, principally fuels, lubricants, solvents, and paints at project staging areas, construction sites and substations could result in spills and leaks and the subsequent cleanup and disposal.
- 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. Spills and accidental releases of fuel, oil, solvents and other hazardous materials could occur in staging yards, construction sites, substations, and along the transmission line during maintenance that could expose workers and the public to hazardous conditions.
- 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. Project construction of new access roads, transmission structures, and substation upgrades could encounter pre-existing contaminated soil at known hazardous waste sites or at previously unknown spill or waste sites.
- Create a significant hazard to workers that encounter residual pesticides and/or herbicides during grading or excavation in agricultural areas. Project construction on historic, recent or active agricultural land where the presence of residual pesticide and herbicide contamination of the soil could represent a potential health hazard associated with exposure of construction workers and the public to contaminated soil.

D.10.3.3 Impacts and Mitigation Measures

Impact HH-1: Improper handling, storage, or accidental spills or releases of hazardous materials could result in harm to the public, project workers, or the environment

Construction of the Proposed Project has the potential to result in leaks and accidental spills of hazardous materials at staging yards and construction sites. During construction operations, hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids would be used and stored in construction staging yards. Gasoline, diesel fuel, oil, hydraulic fluid, lubricants paints, solvents, adhesives, and cleaning chemicals used in construction activities, equipment, and vehicles can be released during construction as a result of accidents, and/or leaking equipment or vehicles. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination. Operations and maintenance activities could result in spills and leaks of hazardous materials at the substations and along the transmission line. The storage of hazardous materials used for routine maintenance activities may occur at the substations where leaks and spills could also result in worker exposure and soil contamination. As part of project permitting, SCE would be required to prepare and submit for approval a project-specific Storm Water Pollution Prevention Plan (SWPPP) to the Santa Ana River Basin and the Colorado River Basin Regional Water Quality Boards (RWQCBs) (See Section D.19, Water Resources and Hydrology, where the SWPPP is discussed at length.). The SWPPP would include provisions to conduct worker training related to storage, use, and handling of hazardous materials, including fueling and maintenance for vehicles, equipment, and helicopters. In addition, SCE would be required to prepare and submit a project-specific Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) to the Hazardous Materials Division of the San Bernardino County Fire Department and the Hazardous Materials Management Division of the Riverside County Department of Environmental Health. The approved SWPPP and SPCC Plans would be submitted to CPUC and BLM prior to the start of construction. The full extent of agency requirements under the SWPPP and SPCC Plans may not cover all concerns identified in this EIS. Therefore, impacts would be further minimized through the implementation of Mitigation Measure HH-1a (Prepare a hazardous materials and waste management plan), which would supplement these plans.

Mitigation Measure for Impact HH-1: Improper handling, storage, or accidental spills or releases of hazardous materials could result in harm to the public, project workers, or the environment

HH-1a **Prepare a Hazardous Materials and Waste Management Plan.** SCE shall prepare a Project-specific Hazardous Materials and Waste Management Plan. Hazardous materials used and stored on site for the proposed construction activities — as well as hazardous wastes generated onsite as a result of the proposed construction activities — shall be managed according to the specifications outlined below.

- **Hazardous Materials and Hazardous Waste Handling:** A project-specific hazardous materials management and hazardous waste handling program shall developed prior to initiation of the project. The program will include the following components: (1) proper hazardous materials use, storage and disposal requirements as well as hazardous waste management procedures; (2)the program shall identify types of hazardous materials to be used during the project and the types of wastes that would be generated; and (3) all project personnel shall be provided with project-specific training to ensure that all hazardous materials and wastes associated with the project are handled in a safe and environmentally sound manner and disposed of according to applicable rules and regulations. Specifically, employees handling wastes shall have or receive hazardous materials training and shall be trained in hazardous waste procedures, spill contingencies, waste minimization procedures and treatment, storage and disposal facility (TSDF) training in accordance with current OSHA Hazard Communication Standard and Title 22 CCR. SCE shall use landfill facilities that are authorized to accept the types of waste generated and hauled.

- **Transport of Hazardous Materials:** Hazardous materials that would be transported by truck include fuel (diesel fuel and gasoline) and oil and lubricants for equipment. Containers used to stored hazardous materials would be properly labeled and kept in good condition. Written procedures for the transport of hazardous materials used would be established in accordance with U.S. Department of Transportation and Caltrans regulations. A qualified transporter would be selected to comply with U.S. Department of Transportation and Caltrans regulations.
- **Fueling and Maintenance of Construction Equipment:** Written procedures for fueling and maintenance of construction equipment would be prepared prior to construction. Refueling and maintenance procedures may require vehicles and equipment to be refueled on site or by tanker trucks. Procedures will require the use of drop cloths made of plastic, drip pans and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling would be located in areas where absorbent pad and trays would be available. The fuel tanks would also contain a lined area to ensure that accidental spillage does not occur. Drip pans or other collection devices would be placed under the equipment at night to capture drips or spills. Equipment would be inspected daily for potential leakage or failures. Hazardous materials such as paints, solvents, and penetrants would be kept in an approved locker or storage cabinet.
- **Fueling and Maintenance of Helicopters:** Written procedures for fueling and maintenance of helicopters would be prepared prior to construction. Procedures may require helicopters be refueled at construction work areas, helicopter staging areas, or local airports. Procedures would include the use of drop cloths made of plastic, drip pans and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling areas would be located in areas where absorbent pad and trays are available.
- **Emergency Release Response Procedures:** An Emergency Response Plan detailing responses to releases of hazardous materials would be developed prior to construction activities. The plan must prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and would include an emergency response program to ensure quick and safe cleanup of accidental spills. Hazardous materials shall not be stored near drains or waterways. Fueling shall not take place within 200 feet of drains or waterways with flowing water or within 75 feet of drains or waterways that are dry. All construction personnel, including environmental monitors, would be made aware of state and federal emergency response reporting guidelines for accidental spills.

The Plan shall be submitted to CPUC and BLM 30 days prior to the start of construction for review and approval.

Impact HH-2: Ground disturbance could result in mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors

There are no known hazardous waste sites within 1,000 feet of the project alignment (based on a review of Government Code Section 65962.5, also known as the Cortese List). However, unanticipated soil contamination could exist along the proposed alignment due to illegal dumping or other historical activities (e.g., mining). Possible types of contamination include gasoline and diesel fuel residuals, heavy metals, solvents, and/or other hazardous materials. Without proper field screening and laboratory testing, contaminated soil could be inadvertently handled and disposed of improperly, resulting in additional environmental contamination or exposure of workers to contaminated materials. To prevent this adverse impact, appropriate handling, screening, and disposal procedures are required.

Mitigation Measure for Impact HH-2: Ground disturbance could result in mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors.

HH-2a **Prepare a Soil Management Plan.** A Soil Management Plan shall be developed and implemented for construction of the Proposed Project. The objective of the Soil Management Plan is to provide guidance for the proper handling, onsite management, and disposal of impacted soil that might be encountered during construction activities. The plan would include practices that are consistent with the California Title 8, Occupational Safety and Health Administration (Cal-OSHA) regulations, as well as appropriate remediation standards that are protective of the planned use. Appropriately trained professionals would be on site during preparation, grading, and related earthwork activities to monitor soil conditions encountered. The Soil Management Plan would provide guidelines for the following:

- Identifying impacted soil
- Assessing impacted soil
- Soil excavation
- Impacted soil storage
- Verification sampling
- Impacted soil characterization and disposal

The plan shall outline how Project construction crews would identify, handle, and dispose of potentially contaminated soil; identify the qualifications of the appropriately trained professionals that would monitor soil conditions and conduct soil sampling during construction; coordinate laboratory testing; and oversee disposal. The Plan shall identify the anticipated field screening methods and appropriate regulatory limits to be applied to determine proper handling and disposal. The Soil Management Plan shall also include requirements for documenting and reporting incidents of encountered contaminants, such as documenting locations of occurrence, sampling results, and reporting actions taken to dispose of contaminated materials. In the event that potentially contaminated soils were encountered within the footprint of construction, soils would be tested and stockpiled. The appropriate Certified Unified Program Agency (CUPA) or RWQCB would determine whether further assessment is warranted.

The Soil Management Plan shall be submitted to the CPUC and BLM 30 days prior to the start of construction for review and approval. Once the Soil Management Plan is made final, a copy shall be provided as a courtesy to each jurisdiction through which the Project passes.

Impact HH-3: Ground disturbance could result in mobilization of pesticides and herbicides in agricultural soils, creating potential pathways of exposure to humans or other sensitive receptors

If encountered, residual pesticide and herbicide contamination of the soil in the agricultural areas of the Proposed Project represents a potential significant impact due to the potential health hazards associated with exposure of construction workers and the public to contaminated soil. Active agriculture occurs within the ROW along Segment 1; historic and recent agricultural areas occur along Segment 3. Grading of access and spur roads and excavation of transmission structure foundations could encounter soil contaminated with pesticides and herbicides, creating a potential health hazard. Mitigation Measure HH-3a (Identify pesticide/herbicide contamination) would address this issue.

Mitigation Measure for Impact HH-3: Ground disturbance could result in mobilization of pesticides and herbicides in agricultural soils, creating potential pathways of exposure to humans or other sensitive receptors.

HH-3a **Identify pesticide/herbicide contamination.** Prior to construction, soil samples shall be collected in construction areas where the land has historically or is currently being used for agriculture and would be subject to ground disturbance by the project. The sampling is to identify the possible presence of and to delineate the extent of pesticide and/or herbicide contamination. Excavated project materials containing elevated levels of pesticide or herbicide will require special handling and disposal procedures consistent with the requirements of Mitigation Measure HH-2a (Prepare a soils management plan). In the event pesticide or herbicide contamination is found, CPUC/BLM shall be notified of the event and shall be kept apprised of the steps taken to address the problem.

D.10.3.4 Impacts of Connected Actions

Impact HH-1: Improper handling, storage, or accidental spills or releases of hazardous materials could result in harm to the public, project workers, or the environment

Common to All Areas. Site grading and the construction of access roads could disturb existing hazardous materials, if present. Geotechnical study borings could also disturb existing hazardous materials. Construction of a renewable energy facility would require the use of hazardous materials, including:

- Various fluids from on-site maintenance of construction vehicles and equipment (e.g., gasoline, diesel fuel, lubricating oils, hydraulic fluids, glycol-based coolants, and spent lead-acid storage batteries).
- Incidental chemical waste from the maintenance of equipment and the application of corrosion-control protective coatings (e.g., solvents, paints, and coatings).
- Construction-related debris (e.g., dimension lumber).

During operation, waste from equipment maintenance and repair may include hazardous constituents. Some industrial wastes (e.g., spent solvents) may be hazardous, but well-established procedures exist for their management, disposal, and recycling. Wastes from herbicide applications could include empty containers and possibly some herbicide rinsing solutions.

For solar PV projects, cadmium telluride (CdTe) may be present in solar panels. CdTe is considered toxic if ingested or inhaled. Human exposure of CdTe would occur only if a module, sealed in glass, generated flake or dust particles. The potential for CdTe release could only occur from severe pitting of the panel surface. In addition, some high-performance solar photovoltaic cells contain small amounts of selenium and arsenic, which could be emitted if solar cells are broken during construction or handling. For photovoltaic facilities using high-performance solar cells, special handling of solar panels containing toxic metals would be required to prevent accidental breakage. This would affect recycling of the solar cell materials at off-site facilities.

The environmental analysis for the Desert Harvest Solar Project provides an example of a typical solar PV project (BLM, 2012). The analysis concluded that hazardous or flammable materials used during construction would consist primarily of small volumes of petroleum hydrocarbons and their derivatives (e.g., fuels, oils, lubricants, and solvents) required for the operation of construction equipment. During the operation and maintenance phase of the project, fewer hazardous materials would be used than during construction, but the types of hazardous materials would be the same.

Typical measures to mitigate the risk and adverse impact of handling, storage, use, or accidental spills or releases of hazardous materials into the environment during construction and operation of solar PV facilities include:

- Prepare and implement a Hazardous Materials and Waste Management Plan
- Prepare and implement a Spill Prevention and Cleanup Plan
- Prepare and implement a Soil Management Plan
- Prepare and implement a Pesticide/Herbicide Use Plan
- Maintain on-site spill containment and cleanup kits
- Best Management Practices (BMPs) for hazardous materials
- Prepare and implement a Spill Prevention Control and Countermeasures Plan
- Prepare and implement an Environmental Health and Safety Plan
- Prepare and implement an Emergency Response and Inventory Plan
- Ensure proper disposal or recycling of photovoltaic panels and other infrastructure
- Use Licensed Herbicide Applicator

The Palen Solar Power Project is in the Desert Center area and would use troughs to concentrate solar energy on a tube, rather than employ PV panels to capture energy. The analysis for this project concluded that during construction, the hazardous materials would include gasoline, diesel fuel, motor oil, welding gases, lubricants, solvents, paint and welding gases (CEC, 2010). Any impact of spills or other releases of these materials would be limited to the site because of the small quantities involved, reduced chances of release because of infrequent use, and the temporary containment berms that would be used by contractors. During operations, hazardous chemicals such as cleaning agents, water treatment chemicals, welding gases, oils, activated carbon and other chemicals be used and stored on-site and would represent a limited off-site hazard due to their small quantities, low volatility, and/or low toxicity. While natural gas would be used in significant quantities, it would not be stored on site. It would be delivered through a new 8-inch pipeline extension. The risk of release would be reduced levels through mandatory adherence to applicable regulations (i.e., 49 CFR Parts 190-192) and the development and implementation of effective safety management practices. Therminol VP1 is a heat transfer fluid that would be used in the solar panels to collect the heat. It is highly combustible and even flammable. Approximately 2.6 million gallons of heat transfer fluid would be stored on site. Condition of Certification HAZ-4 would require the project owner to install a sufficient number of isolation valves that can be manually, remotely or automatically activated so as to limit the maximum amount of spilled heat transfer fluid.

To mitigate any adverse impact of handling, storage, use, or accidental spills or releases of hazardous materials into the environment during construction and operation of the Palen Solar Power Project, the following measures were included:

- Hazardous Material Business Plan
- Spill Prevention, Control, and Countermeasure Plan

- Prepare and implement a Hazardous Materials Business Plan.
- Prepare and implement a Safety Management Plan.
- Construction Site Security Plan.
- Operation Security Plan.
- Prepare and implement a Cooling Water Management Plan.

Impact HH-2: Ground disturbance could result in mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors

Common to All Areas. In the areas where connected projects have been identified, the locations of most of the solar PV projects are unknown. Therefore, the potential for existing soil contaminants to be disturbed during construction and for people to be exposed is unknown. However, conducting a Phase I Environmental Site Assessment at each site would determine what and where existing contamination may exist. Based on the assessment, either a site would be deemed safe to disturb or clean-up and containment actions would be required to ensure contaminant mobilization or human exposure would not occur.

Desert Center Area. Two projects in this area are at known locations. Phase I Environmental Site Assessments conducted for both the Palen Solar Power Project and Desert Harvest Solar Project found no evidence or record of any use, spillage, or disposal of hazardous substances within these particular sites. However, the Phase I Environmental Site Assessment conducted for a project adjacent to Desert Harvest Solar Project indicated that project area was possibly used historically as a military training facility and that there is some potential for munitions and explosives of concern to be present on site. This was mitigated by that project's developing and implementing a plan to address munitions and explosives of concern.

Impact HH-3: Ground disturbance could result in mobilization of pesticides and herbicides in agricultural soils, creating potential pathways of exposure to humans or other sensitive receptors

Common to All Areas. Ground disturbance associated with the connected projects in the Desert Center and Blythe areas could mobilize pesticides and herbicides in soils and create potential pathways of exposure to humans or other sensitive receptors. The potential for this to occur would be the same as that analyzed for other contaminants under impacts HH-1 (use of hazardous materials including pesticides/herbicides) and HH-2 (ground disturbance), and similar mitigation measures would apply.

D.10.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section, and the No Action Alternative is evaluated in Section D.10.5. The project alternatives would be located within the WOD corridor. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Hazards and hazardous materials within the ROW are described by segment in Section D.10.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.10.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Three impacts related to hazards and hazardous materials were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.10.3.3, except where otherwise noted.

Impact HH-1: Improper handling, storage, or accidental spills or releases of hazardous materials could result in harm to the public, project workers, or the environment

Construction of the Proposed Project and the Tower Relocation Alternative have the potential to result in leaks and accidental spills of hazardous materials at staging yards and construction sites. During construction operations, hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids would be used and stored in construction staging yards. Gasoline, diesel fuel, oil, hydraulic fluid, lubricants paints, solvents, adhesives, and cleaning chemicals used in construction activities, equipment, and vehicles can be released during construction as a result of accidents, and/or leaking equipment or vehicles. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination. Operations and maintenance activities could result in spills and leaks of hazardous materials at the substations and along the transmission line. The storage of hazardous materials used for routine maintenance activities may occur at the substations where leaks and spills could also result in worker exposure and soil contamination.

In general, the relocated towers would be moved approximately 50 feet farther from the southern edge of the ROW. The risk of a spill or accidental release of hazardous materials would be the same for this alternative as for the Proposed Project. As part of project permitting, SCE would be required to prepare and obtain approval of a project-specific Storm Water Pollution Prevention Plan (SWPPP) and a project-specific Spill Prevention, Control, and Countermeasures Plan (SPCC Plan). These required plans would reduce the risk of a spill or accidental release of hazardous materials. However, the full extent of agency requirements under the SWPPP and SPCC Plans may not cover all concerns identified in this EIS. Implementation of Mitigation Measure HH-1a (Prepare a hazardous materials and waste management plan) would further reduce the risk of harm to the public, project workers, or the environment through the accidental release of hazardous materials. Compliance with existing regulations and implementation of mitigation would ensure that this adverse effect would be minor.

Impact HH-2: Ground disturbance could result in mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors

There are no known hazardous waste sites within 1,000 feet of the relocated towers (based on a review of Government Code Section 65962.5, also known as the Cortese List). However, unanticipated soil contamination could exist along the proposed alignment due to illegal dumping or other historical activities (e.g., mining). Possible types of contamination include gasoline and diesel fuel residuals, heavy metals, solvents, and/or other hazardous materials. Without proper field screening and laboratory testing, contaminated soil could be inadvertently handled and disposed of improperly, resulting in additional environmental contamination or exposure of workers to contaminated materials. To prevent this adverse impact, appropriate handling, screening, and disposal procedures are required.

The risk that ground disturbance for the relocated towers would mobilize existing contaminants is the same as for the Proposed Project towers. With implementation of Mitigation Measure HH-2a (Prepare a soil management plan), this adverse effect would be minor.

Impact HH-3: Ground disturbance could result in mobilization of pesticides and herbicides in agricultural soils, creating potential pathways of exposure to humans or other sensitive receptors

If encountered, residual pesticide and herbicide contamination of the soil in the agricultural areas of the Proposed Project represents a potential significant impact due to the potential health hazards associated with exposure of construction workers and the public to contaminated soil. Grading of access and spur roads and excavation of transmission structure foundations could encounter soil contaminated with pesticides and herbicides, creating a potential health hazard.

The mobilization of soil that is contaminated with residual pesticides or herbicides would result in a substantial adverse effect due to the potential health hazards associated with exposure of construction workers and the public to contaminated soil. One of the relocated towers is located within an orchard or nursery, and several of the relocated towers are located on or near a golf course. Implementation of Mitigation Measure HH-3a (Identify pesticide/herbicide contamination) would ensure that this adverse effect would be minor.

D.10.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Three impacts related to hazards and hazardous materials were identified for the Proposed Project. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.10.3.3, except where otherwise noted.

Impact HH-1: Improper handling, storage, or accidental spills or releases of hazardous materials could result in harm to the public, project workers, or the environment

Construction of the Proposed Project and the Iowa Street 66 kV Underground Alternative have the potential to result in leaks and accidental spills of hazardous materials at staging yards and construction sites. During construction operations, hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids would be used and stored in construction staging yards. Gasoline, diesel fuel, oil, hydraulic fluid, lubricants paints, solvents, adhesives, and cleaning chemicals used in construction activities, equipment, and vehicles can be released during construction as a result of accidents, and/or leaking equipment or vehicles. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination. Operations and maintenance activities could result in spills and leaks of hazardous materials at the substations and along the transmission line. The storage of hazardous materials used for routine maintenance activities may occur at the substations where leaks and spills could also result in worker exposure and soil contamination.

This alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. Due to the more intensive excavation construction activity associated with the underground segment, this alternative would have a higher likelihood of construction spills. Implementation of Mitigation Measure HH-1a (Prepare a hazardous materials and waste management plan) would reduce the risk of harm to the public, project workers, or the environment through the accidental release of hazardous materials. Compliance with existing regulations and implementation of mitigation would ensure that this adverse effect would be minor.

Impact HH-2: Ground disturbance could result in mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors

Unanticipated soil contamination could exist along the proposed alignment due to illegal dumping or other historical activities. Possible types of contamination include gasoline and diesel fuel residuals, heavy metals, solvents, and/or other hazardous materials. Without proper field screening and laboratory testing, contaminated soil could be inadvertently handled and disposed of improperly, resulting in additional environmental contamination or exposure of workers to contaminated materials. To prevent this adverse impact, appropriate handling, screening, and disposal procedures are required.

While this underground alternative would increase somewhat the amount of ground disturbance compared to the Proposed Project, there are no known hazardous waste sites within 1,000 feet of the underground subtransmission line (based on a review of Government Code Section 65962.5, also known as the Cortese List). With implementation of Mitigation Measure HH-2a (Prepare a soil management plan), this adverse effect would be minor.

Impact HH-3: Ground disturbance could result in mobilization of pesticides and herbicides in agricultural soils, creating potential pathways of exposure to humans or other sensitive receptors

If encountered, residual pesticide and herbicide contamination of the soil in the agricultural areas of the Proposed Project represents a potential significant impact due to the potential health hazards associated with exposure of construction workers and the public to contaminated soil. Excavation could encounter soil contaminated with pesticides and herbicides, creating a potential health hazard.

The underground subtransmission line is located adjacent to some agricultural areas, so there is a possibility of encountering soil that is contaminated by residual pesticides and herbicides. This risk is greater than for the Proposed Project due to the increased amount of ground disturbance required for the underground construction as compared to the corresponding overhead construction being eliminated. Implementation of Mitigation Measure HH-3a (Identify pesticide/herbicide contamination) would ensure that this adverse effect would be minor.

D.10.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double 220 circuit structures, and string all structures with higher-capacity conductors.

Three impacts related to hazards and hazardous materials were identified for the Proposed Project. These impacts also would apply to the Phased Build Alternative. The full text of all mitigation measures referenced in this section is presented in Section D.10.3.3, except where otherwise noted.

Impact HH-1: Improper handling, storage, or accidental spills or releases of hazardous materials could result in harm to the public, project workers, or the environment

Construction of the Proposed Project and of the Phased Build Alternative have the potential to result in leaks and accidental spills of hazardous materials at staging yards and construction sites. During construction operations, hazardous materials such as vehicle fuels, oil, hydraulic fluid, and other vehicle maintenance fluids would be used and stored in construction staging yards. Gasoline, diesel fuel, oil, hydraulic fluid, lubricants paints, solvents, adhesives, and cleaning chemicals used in construction activities, equipment, and vehicles can be released during construction as a result of accidents, and/or leaking equipment or vehicles. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination. Operations and maintenance activities could result in spills and leaks of hazardous materials at the substations and along the transmission line. The storage of hazardous materials used for routine maintenance activities may occur at the substations where leaks and spills could also result in worker exposure and soil contamination. As part of project permitting, SCE would be required to prepare and submit for approval a project-specific Storm Water Pollution Prevention Plan (SWPPP) to the Santa Ana River Basin and the Colorado River Basin Regional Water Quality Boards (RWQCBs) (See Section D.19, Water Resources and Hydrology, where the SWPPP is discussed at length.). The SWPPP would include provisions to conduct worker training related to storage, use, and handling of hazardous materials, including fueling and maintenance for vehicles, equipment, and helicopters.

Construction of this alternative, as with the Proposed Project, could harm the public, project workers, or the environment through the accidental release of hazardous materials (such as fuel, lubricants, coolants, and hydraulic and transmission fluids). Although less construction would occur overall, the risk of harm to the public, project workers, or the environment through the accidental release of hazardous materials for this alternative would be similar to the Proposed Project.

While the quantities of hazardous materials and their locations of use may vary between the alternative and the Proposed Project, the risk of a spill or accidental release of hazardous materials would be the similar for this alternative as for the Proposed Project. As part of project permitting, SCE would be required to prepare and obtain approval of a project-specific Storm Water Pollution Prevention Plan (SWPPP) and a project-specific Spill Prevention, Control, and Countermeasures Plan (SPCC Plan). These required plans would reduce the risk of a spill or accidental release of hazardous materials. Implementation of Mitigation Measure HH-1a (Prepare a hazardous materials and waste management plan) would further reduce the risk of harm to the public, project workers, or the environment through the accidental release of hazardous materials. Compliance with existing regulations and implementation of mitigation would ensure that this adverse effect would be minor.

Impact HH-2: Ground disturbance could result in mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors

There are no known hazardous waste sites within 1,000 feet of the project alignment (based on a review of Government Code Section 65962.5, also known as the Cortese List). However, unanticipated soil contamination could exist along the proposed alignment due to illegal dumping or other historical activities (e.g., mining). Possible types of contamination include gasoline and diesel fuel residuals, heavy metals, solvents, and/or other hazardous materials. Without proper field screening and laboratory testing, contaminated soil could be inadvertently handled and disposed of improperly, resulting in additional environmental contamination or exposure of workers to contaminated materials. To prevent this adverse impact, appropriate handling, screening, and disposal procedures are required.

With fewer areas of ground disturbance under the Phased Build Alternative, there would be fewer opportunities to mobilize existing contaminants that may be present in the soil, as compared to the Proposed Project. Unanticipated soil contamination could exist along the proposed alignment due to illegal dumping or other historical activities. This contaminated could be mobilized through construction-related ground disturbance, which could expose humans or other sensitive receptors to contaminants. With implementation of Mitigation Measure HH-2a (Prepare a soil management plan), this adverse effect would be minor.

Impact HH-3: Ground disturbance could result in mobilization of pesticides and herbicides in agricultural soils, creating potential pathways of exposure to humans or other sensitive receptors

If encountered, residual pesticide and herbicide contamination of the soil in the agricultural areas of the Proposed Project represents a potential significant impact due to the potential health hazards associated with exposure of construction workers and the public to contaminated soil. Active agriculture occurs within the ROW along Segment 1; historic and recent agricultural areas occur along Segment 3. Grading of access and spur roads and excavation of transmission structure foundations could encounter soil contaminated with pesticides and herbicides, creating a potential health hazard.

The mobilization of soil that is contaminated with residual pesticides or herbicides would result in a substantial adverse effect due to the potential health hazards associated with exposure of construction workers and the public to contaminated soil. While there would be less soil disturbance under the Phased Build Alternative, the disturbance would occur in similar areas to the Proposed Project.

Active agriculture occurs within the ROW along Segment 1; historic and recent agricultural areas occur along Segment 3. Grading of access and spur roads and excavation of transmission structure foundations could mobilize soil contaminated with pesticides and herbicides, creating a potential health hazard. Implementation of Mitigation Measure HH-3a (Identify pesticide/herbicide contamination) would ensure that this adverse effect would be minor.

D.10.5 Environmental Impacts of No Action Alternative

D.10.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

No Action Alternative Transmission Lines and Beaumont Substation. Ground disturbance on or near sites of known previous hazardous materials storage or spills may encounter contaminated soil and groundwater. Also, unreported spills or illegal dumping may have occurred, leading to unanticipated discovery of contamination. In agricultural areas, lands with residual herbicide or pesticide may be encountered. Contamination may be encountered in both developed and rural areas. In addition, during project construction, hazardous materials (including fuels, lubricants, solvents, and similar materials) may be stored, used, and spilled. Implementation of hazardous materials and waste management plans (addressing materials use, storage, handling, transportation, and disposal, as well as fueling and maintenance of equipment and emergency response to releases) would serve to address these impacts. A soil management plan would address unanticipated discovery of contamination, and soil testing for pesticide and herbicide contamination in agricultural areas would serve to address the issue of residuals in the soil. The Devers to Beaumont Substation alignment would follow the existing Devers to Valley alignment. The analysis of the Devers to Valley alignment in the DPV2 EIR/EIS concluded that impacts from residual contamination in soil or from accidental spills would be less than significant with mitigation.

D.10.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b.

Contaminated soils or groundwater may be encountered or mobilized through ground disturbance on or near sites of known previous hazardous materials storage or spills. Also, unanticipated discovery or mobilization of hazardous materials may occur near areas of unreported spills or illegal dumping. The El Sobrante Landfill is located approximately 0.5 miles north of the ROW near MP 19.5. Past or present activities at the landfill may have resulted in unanticipated contamination of soil or groundwater downgradient of the landfill that could be disturbed or mobilized by construction of this alternative. Also, commercial and industrial activity along Interstate 15 on either side of the transmission corridor may have resulted in unanticipated contamination of soil or groundwater. Agricultural lands are concentrated in the Perris Valley at the far eastern end of the corridor, and may contain residual herbicide or pesticide soil contamination that could be mobilized during ground disturbing activities, including excavation for transmission structure foundations. The same as in the Proposed Project and No Action Alternative Option 1, during construction hazardous materials may be stored, used, and spilled. Mitigation requirements would be the same as for Option 1.

D.10.6 Mitigation Monitoring, Compliance, and Reporting

Table D.10-1 presents the mitigation monitoring, compliance, and reporting actions for hazards and hazardous materials.

Table D.10-1. Mitigation Monitoring Program – Hazards and Hazardous Materials

MITIGATION MEASURE	**HH-1a: Prepare a Hazardous Materials and Waste Management Plan.** SCE shall prepare a Project-specific Hazardous Materials and Waste Management Plan. Hazardous materials used and stored on site for the proposed construction activities — as well as hazardous wastes generated onsite as a result of the proposed construction activities — shall be managed according to the specifications outlined below. ▪ **Hazardous Materials and Hazardous Waste Handling:** A project-specific hazardous materials management and hazardous waste handling program shall developed prior to initiation of the project. The program will include the following components: (1) proper hazardous materials use, storage and disposal requirements as well as hazardous waste management procedures; (2)the program shall identify types of hazardous materials to be used during the project and the types of wastes that would be generated; and (3) all project personnel shall be provided with project-specific training to ensure that all hazardous materials and wastes associated with the project are handled in a safe and environmentally sound manner and disposed of according to applicable rules and regulations. Specifically, employees handling wastes shall have or receive hazardous materials training and shall be trained in hazardous waste procedures, spill contingencies, waste minimization procedures and treatment, storage and disposal facility (TSDF) training in accordance with current OSHA Hazard Communication Standard and Title 22 CCR. SCE shall use landfill facilities that are authorized to accept the types of waste generated and hauled. ▪ **Transport of Hazardous Materials:** Hazardous materials that would be transported by truck include fuel (diesel fuel and gasoline) and oil and lubricants for equipment. Containers used to stored hazardous materials would be properly labeled and kept in good condition. Written procedures for the transport of hazardous materials used would be established in accordance with U.S. Department of Transportation and Caltrans regulations. A qualified transporter would be selected to comply with U.S. Department of Transportation and Caltrans regulations. ▪ **Fueling and Maintenance of Construction Equipment:** Written procedures for fueling and maintenance of construction equipment would be prepared prior to construction. Refueling and maintenance procedures may require vehicles and equipment to be refueled on site or by tanker trucks. Procedures will require the use of drop cloths made of plastic, drip pans and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling would be located in areas where absorbent pad and trays would be available. The fuel tanks would also contain a lined area to ensure that accidental spillage does not occur. Drip pans or other collection devices would be placed under the equipment at night to capture drips or spills. Equipment would be inspected daily for potential leakage or failures. Hazardous materials such as paints, solvents, and penetrants would be kept in an approved locker or storage cabinet. ▪ **Fueling and Maintenance of Helicopters:** Written procedures for fueling and maintenance of helicopters would be prepared prior to construction. Procedures may require helicopters be refueled at construction work areas, helicopter staging areas, or local airports. Procedures would include the use of drop cloths made of plastic, drip pans and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling areas would be located in areas where absorbent pad and trays are available.

Table D.10-1. Mitigation Monitoring Program – Hazards and Hazardous Materials

	▪ **Emergency Release Response Procedures:** An Emergency Response Plan detailing responses to releases of hazardous materials would be developed prior to construction activities. The plan must prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and would include an emergency response program to ensure quick and safe cleanup of accidental spills. Hazardous materials shall not be stored near drains or waterways. Fueling shall not take place within 200 feet of drains or waterways with flowing water or within 75 feet of drains or waterways that are dry. All construction personnel, including environmental monitors, would be made aware of state and federal emergency response reporting guidelines for accidental spills. The Plan shall be submitted to CPUC and BLM 30 days prior to the start of construction for review and approval.
Location	Entire project
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits the required Plan, and monitors compliance during construction.
Effectiveness Criteria	Plan is submitted and adopted, and is implemented fully during construction
Responsible Agency	CPUC/BLM
Timing	30 days prior to construction Plan is submitted for review and approval.
MITIGATION MEASURE	**HH-2a: Prepare a Soil Management Plan.** A Soil Management Plan shall be developed and implemented for construction of the Proposed Project. The objective of the Soil Management Plan is to provide guidance for the proper handling, onsite management, and disposal of impacted soil that might be encountered during construction activities. The plan would include practices that are consistent with the California Title 8, Occupational Safety and Health Administration (Cal-OSHA) regulations, as well as appropriate remediation standards that are protective of the planned use. Appropriately trained professionals would be on site during preparation, grading, and related earthwork activities to monitor soil conditions encountered. The Soil Management Plan would provide guidelines for the following: ▪ Identifying impacted soil ▪ Assessing impacted soil ▪ Soil excavation ▪ Impacted soil storage ▪ Verification sampling ▪ Impacted soil characterization and disposal The plan shall outline how Project construction crews would identify, handle, and dispose of potentially contaminated soil; identify the qualifications of the appropriately trained professionals that would monitor soil conditions and conduct soil sampling during construction; coordinate laboratory testing; and oversee disposal. The Plan shall identify the anticipated field screening methods and appropriate regulatory limits to be applied to determine proper handling and disposal. The Soil Management Plan shall also include requirements for documenting and reporting incidents of encountered contaminants, such as documenting locations of occurrence, sampling results, and reporting actions taken to dispose of contaminated materials. In the event that potentially contaminated soils were encountered within the footprint of construction, soils would be tested and stockpiled. The appropriate Certified Unified Program Agency (CUPA) or RWQCB would determine whether further assessment is warranted. The Soil Management Plan shall be submitted to the CPUC and BLM 30 days prior to the start of construction for review and approval. Once the Soil Management Plan is made final, a copy shall be provided as a courtesy to each jurisdiction through which the Project passes.
Location	Entire Project
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits the required Plan, and monitors compliance during construction.
Effectiveness Criteria	Plan is submitted and adopted, and is implemented fully during construction

Table D.10-1. Mitigation Monitoring Program – Hazards and Hazardous Materials

Responsible Agency	CPUC/BLM
Timing	30 days prior to construction Plan is submitted for review and approval.
MITIGATION MEASURE	**HH-3a: Identify pesticide/herbicide contamination.** Prior to construction, soil samples shall be collected in construction areas that where the land has historically or is currently being used for agriculture and would be subject to ground disturbance by the project. The sampling is to identify the possible presence of and to delineate the extent of pesticide and/or herbicide contamination. Excavated project materials containing elevated levels of pesticide or herbicide will require special handling and disposal procedures consistent with the requirements of Mitigation Measure HH-2a (Prepare a soils management plan). In the event pesticide or herbicide contamination is found, CPUC/BLM shall be notified of the event and shall be kept apprised of the steps taken to address the problem.
Location	Areas of current or past agricultural use.
Monitoring / Reporting Action	CPUC/BLM monitor verifies compliance during construction.
Effectiveness Criteria	Contaminated soil is properly identified and managed, protecting workers and the public
Responsible Agency	CPUC/BLM
Timing	Prior to construction in current or historic agricultural areas, soil is sampled for residual pesticides and herbicides.

D.10.7 References

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D.11 Land Use and BLM Realty

This section describes the affected environment for Land Use and BLM Realty in Section D.11.1 and presents the relevant regulations and standards in Section D.11.2. Sections D.11.3 through D.11.5 describe the impacts of the Proposed Project and the alternatives. Section D.11.6 presents the mitigation measures and mitigation monitoring requirements, and D.11.7 lists references cited.

D.11.1 Environmental Setting / Affected Environment

D.11.1.1 Regional Setting and Approach to Data Collection

The project study area is defined as the locations where work associated with the Proposed Project, as described in Section B (Description of Proposed Project), would take place. Figures D.11-1a through D.11-1k show the General Plan land uses designations in a 500-foot buffer from the centerline of all Proposed Project components. Sets of figures showing both General Plan Land Use and Zoning are found at the end of this section. They provide context regarding surrounding land uses. This buffer area is not included in the analysis of land use impacts; the analysis addresses only the project study area.

The project study area includes the cities of Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Palm Springs, Rancho Cucamonga, Redlands, San Bernardino, and Yucaipa, and unincorporated areas of Riverside and San Bernardino Counties. In the City of Rancho Cucamonga, the Proposed Project is limited to improvements to the Mechanical Electrical Equipment Room (MEER) at Etiwanda Substation. Because this work would take place within an existing facility and would not affect land use, the City of Rancho Cucamonga is excluded from further analysis.

The Proposed Project begins in the urbanized areas of Grand Terrace and Loma Linda on the west and ends near the City of Palm Springs on the east. The project study area transects urban and suburban areas, canyons, low desert areas, and portions of the reservation trust land (the reservation) of the Morongo Band of Mission Indians (Morongo). See Figure B-2a through Figure B-7a, in Section B, Description of the Proposed Project. Except for a 3-mile section of Segment 5, the project's 220 kV transmission lines would be located within the existing WOD corridor. In addition to housing electric transmission infrastructure, the project corridor includes trails and open space (see Section D.15, Recreation) and some areas of agricultural/nursery use. The project study area passes through drainages, roadways, parks, a portion of a landfill property, and an aggregate (sand and gravel) operation. Land uses near the project study area include residences, commercial businesses, agriculture, schools and fire stations, landfill operations, and the Banning Municipal Airport.

Two federal agencies have jurisdiction over segments of the Proposed Project: Bureau of Land Management (BLM), in portions of Segment 6, and the Bureau of Indian Affairs (BIA), in portions of Segments 4 and 5. This project is located within two BLM-designated transmission corridors, Corridor K and contingent Corridor S of the California Desert Conservation Area Plan, so a plan amendment would not be required. If this project is approved, then the BLM-managed portions of the three segments of BLM-managed land in contingent Corridor S that are a part of this project will be designated as an active corridor.

As noted in Section A, the CPUC has jurisdiction over the siting and design of the Proposed Project because the CPUC regulates and authorizes the construction of investor-owned public utility (IOU) facilities. These projects are exempt from local land use and zoning regulations and permitting; however CPUC General Order (GO) No. 131-D, Section III.C requires that "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits." Therefore local and State land use plans are discussed as part of this analysis.

Existing land use information is based on General Plans and review of aerial photographs and is depicted in Figures D.11-1a through D.11-1k. Zoning designations are based on adopted zoning maps for the relevant jurisdictions. Zoning is shown on Figures D.11-2a through D.11-2k. The Proposed Project overlaps with two adopted Habitat Conservation Plans (HCPs): the Western Riverside County Multiple Species Habitat Conservation Plan (WR-MSHCP) and the Coachella Valley Multiple Species Habitat Conservation Plan (CV-MSHCP). See Section D.4 (Biological Resources – Vegetation) and Section D.5 (Biological Resources – Wildlife) for more information on these HCPs.

D.11.1.2 Environmental Setting by Segment

Table D.11-1 shows general plan land use designations by Proposed Project component, and Table D.11-2 shows general plan land uses by jurisdiction.

Table D.11-1. General Plan Land Use Designations by Proposed Project Component (acres)

Project Component	Agricultural	Commercial	Industrial	Office	Open Space	Public Facilities	Residential	Specific Plan	Transportation	Total
Transmission	71.3	77.8	339.2	5.3	1,282.8	22.9	513.4	287.3	5.1	2,605.1
Subtransmission	0.0	71.6	39.2	6.5	5.2	1.3	19.1	1.9	2.7	147.5
Telecommunications	0.0	4.5	0.0	1.5	91.7	220.6	170.7	0.6	0.0	489.6
Access roads	11.1	2.1	6.9	0.7	124.1	1.6	26.7	34.9	0.1	208.2
Distribution	0.0	15.8	0.0	1.0	1.0	0.5	15.3	12.6	2.3	48.4
Staging yards	0.0	3.7	21.0	42.9	0.0	19.6	49.0	0.0	0.0	136.2
TOTAL	82.4	175.5	406.4	57.8	1,504.7	266.5	794.2	337.3	10.2	3,632.0

Table D.11-2. General Plan Land Uses for the Proposed Project by Jurisdiction (acres)

Jurisdiction	Agricultural	Commercial	Industrial	Office	Open Space	Public Facilities	Residential	Specific Plan	Transportation	Total
Banning	81.6	7.6	57.2	44.4	152.3	4.6	155.3	0.0	0.0	503.0
Beaumont	0.0	9.3	0.0	0.0	123.4	0.0	115.9	0.6	0.0	249.3
Calimesa	0.0	7.6	0.0	0.0	0.0	0.0	20.2	111.3	0.0	139.1
Colton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.3	0.0	71.3
Grand Terrace	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	5.9
Loma Linda	0.0	7.9	1.6	9.6	141.9	0.0	15.7	153.9	3.8	334.4
Palm Springs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rancho Cucamonga	0.0	0.0	12.7[1]	0.0	0.0	0.0	0.0	0.0	0.0	12.7
Redlands	0.8	55.6	2.1	0.0	133.4	14.9	0.0	0.0	0.0	206.7
San Bernardino	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	3.1
County of Riverside	0.0	20.4	307.1	0.0	937.0	245.3	424.8	0.2	3.1	1,937.9
County of San Bernardino	0.0	67.2	38.4	3.8	16.7	1.8	53.3	0.0	3.3	184.5
TOTAL	82.4	175.5	406.4	57.8	1,504.7	266.5	792.3	337.3	10.2	3,611.0

1 - Acreage of Etiwanda Substation

D.11.1.2.1 Segment 1: San Bernardino

Segment 1 is shown on Figure D.11-1a. This segment includes San Bernardino Substation, the 220 kV transmission lines, the San Bernardino–Redlands-Timoteo 66 kV Subtransmission Line, the San Bernardino–Redlands-Tennessee 66 kV Subtransmission Line, distribution lines, telecommunications lines, access roads, and the Mountain View 1 and Lugonia staging yards. This segment is entirely within San Bernardino County, within unincorporated portions of the County and the Cities of Redlands and Loma Linda.

In addition to existing transmission infrastructure, Segment 1 currently consists of commercial, industrial, office, and residential uses. The proposed Mountain View 1 staging yard is currently a vacant lot, and the Lugonia staging yard is being used as a staging area for a pipeline project. South of Redlands Boulevard there is a trail within the project corridor that was developed by the City of Loma Linda. San Bernardino International and Redlands Municipal Airports are approximately 1 mile north and 5 miles east, respectively, of the Proposed Project corridor.

General Plan. Within the City of Redlands Segment 1 of the Proposed Project corridor includes the following General Plan classifications: commercial, industrial, public facilities, and open space. The City of Loma Linda General Plan land use classifications include: office, commercial, specific plan, industrial, transportation, open space, and residential. The City of Loma Linda's mission Road Special Planning Area designates residential use within the project corridor. The County of San Bernardino's General Plan designates commercial and residential areas within the project corridor. The Mountain View 1 staging yard is designated as residential in the City of San Bernardino General Plan, and the Lugonia staging yard is designated for commercial use in the City of Redlands General Plan.

Zoning. Within the City of Redlands the project corridor is zoned for commercial, residential, public facilities, and industrial use. Within the City of Redland's East Valley Corridor Specific Plan, the project corridor is zoned for commercial use. Within the City of Loma Linda, the project corridor is zoned for open space, residential, office, industrial, public facility, and commercial use. Within the City of Loma Linda's Mission Road Special Planning Area, the project study area is zoned for residential use. Segment 1 zoning within the County of San Bernardino includes open space and residential. The Mountain View 1 staging yard is zoned by the City of San Bernardino for public facilities. The Lugonia staging yard is part of the City of Redlands's East Valley Corridor Specific Plan and is zoned Commercial. Figure D.11-2a shows zoning designations in Segment 1.

D.11.1.2.2 Segment 2: Colton and Loma Linda

Segment 2, shown on Figure D.11-1b, includes Vista Substation, the 220 kV transmission lines, telecommunications lines, access roads, and the Grand Terrace staging yard. Segment 2 is in San Bernardino County and passes through the cities of Grand Terrace, Colton, and Loma Linda. Currently, Segment 2 consists primarily of residential and open space uses. The Grand Terrace staging yard is currently a vacant lot, but it is part of an existing SCE utility corridor.

General Plan. Various plans cover Segment 2. The portion of Segment 2 under the City of Colton's Reche Canyon Specific Plan designates its area as residential and open space. The City of Grand Terrace General Plan designates its portion of Segment 2 for residential use. The portion of Segment 2 under the City of Loma Linda's General Plan is designated as open space and residential, and the County of San Bernardino General Plan designates its portions as commercial and residential. The City of Grand Terrace General Plan designates the Grand Terrace staging yard as residential.

Zoning. The City of Colton's Reche Canyon Specific Plan zones a portion of Segment 2 as residential and open space. In the City of Grand Terrace, zoning classifications within the Proposed Project corridor are residential, industrial, transportation, and public facilities. City of Loma Linda zoning classifications are open space and residential. San Bernardino County zoning classifications are open space and residential. A portion of San Bernardino County is zoned for rural residential use under a Specific Plan. The City of Grand Terrace classifies the Grand Terrace staging yard as a residential zone. Figure D.11-2b shows zoning designations in Segment 2.

D.11.1.2.3 Segment 3: San Timoteo Canyon

Segment 3, shown on Figures D.11-1b through D.11-1d, includes El Casco Substation, the 220 kV transmission lines, telecommunications lines, access roads, and the Poultry and San Timoteo staging yards. Segment 3 passes through the City of Redlands. About half of Segment 3 is in San Bernardino County and half is in Riverside County. Existing land uses in this segment are primarily agricultural and open space. The Poultry and San Timoteo staging yards are both currently vacant lots.

General Plan. The County of San Bernardino General Plan classifies a portion of Segment 3 as open space. The areas of Segment 3 covered by the City of Redlands General Plan are classified as agriculture, open space, and public facility. The County of Riverside General Plan classifies the segment as open space, commercial, and residential; the Poultry and San Timoteo staging yards are designated for residential use.

Zoning. The County of San Bernardino zones a portion of Segment 3 as open space/parks/recreation. Within the City of Redlands, the segment is zoned for agriculture. County of Riverside zoning classifications for the segment are controlled development area and agricultural. The Poultry and San Timoteo staging yards are zoned controlled development area by the County of Riverside. Figure D.11-2b, through Figure D.11-2d show zoning designations in Segment 3.

D.11.1.2.4 Segment 4: Beaumont and Banning

Segment 4, shown on Figures D.11-1d through Figure D.11-1h, includes the 220 kV transmission lines, telecommunications lines (including telecommunications work at Maraschino Substation), access roads, and the Beaumont 1 and Beaumont 2 staging yards. Segment 4 passes through the cities of Calimesa, Beaumont, and Banning and through the Morongo reservation. The entire segment is within Riverside County.

General Plan. The City of Calimesa's General Plan classifies Segment 4 as residential and commercial, and Calimesa's Summerwind Ranch Specific Plan designates a portion of Segment 4 as residential and open space. The City of Beaumont classifies Segment 4 as open space, residential, and commercial. The City of Banning General Plan classifies areas of Segment 4 as open space, commercial, and residential. The County of Riverside General Plan designates a section of Segment 4 as agriculture. The Beaumont 1 staging yard is designated industrial and commercial by the City of Beaumont, and the Beaumont 2 staging yard is designated commercial.

Zoning. The City of Calimesa zones a portion of Segment 4 as residential, and Calimesa's Summerwind Ranch Specific Plan zones a portion as residential and open space. The City of Beaumont zones sections as residential, open space, commercial, and industrial. The City of Banning zones portions of Segment 4 as open space, commercial, agriculture, public facilities, and residential. The County of Riverside zoning includes controlled development area and public facilities. Both the Beaumont 1 and Beaumont 2 staging yards are zoned as commercial by the City of Beaumont. Zoning designations in Segment 4 are shown in Figures D.11-2d through D.11-2h.

D.11.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

General Plan Land Use for Segment 5 is shown in Figures D.11-1g through D.11-1i. Segment 5 includes the 220 kV transmission lines, telecommunications lines (including telecommunications work at Banning

Substation), access roads, and the Hathaway 1 and Hathaway 2 staging yards. Segment 5 passes through the City of Banning and the Morongo reservation within the County of Riverside. Residential and open space are the dominant existing land uses. Banning Municipal Airport is approximately 2 miles south of Segment 5. Both the Hathaway 1 and Hathaway 2 staging yards are currently vacant lots. The Matich staging yard is not shown on Figure D.11-1g but would be located northwest of Hathaway 1. The Hathaway 1 area was previously disturbed and contains concrete and fencing; the Hathaway 2 lot is undeveloped. The Matich yard was previously disturbed and contains concrete.

General Plan. The City of Banning General Plan classifies Segment 5 as open space, public facility, residential, industrial, and agricultural. A portion of this segment is in both the City of Banning and the Morongo reservation; this portion is designated residential, open space, commercial, office, and public facility. Another section that is within only the Morongo reservation General Plan area is designated as industrial, residential, open space, commercial, office, and public facility. The County of Riverside designates sections of Segment 5 as transportation, commercial, residential, industrial, and open space. The Hathaway 1 and Hathaway 2 staging yards are designated as office by the City of Banning General Plan. The Matich staging yard is designated as Industrial – Mineral Resources by the City of Banning General Plan.

Zoning. The City of Banning zones portions of Segment 5 as open space, residential, industrial, and commercial. A portion of this segment is in both the County of Riverside and the Morongo reservation; this portion is zoned residential, open space, commercial, and controlled development area. Other areas of Riverside County zoning include commercial, residential, and controlled development area. The Hathaway 1 and Hathaway 2 staging yards are zoned by the City of Banning as commercial. The Matich staging yard is zoned as industrial by the City of Banning. Zoning designations in Segment 5 are shown in Figures D.11-2g through D.11-2i.

D.11.1.2.6 Segment 6: Whitewater and Devers

Segment 6 is shown in Figures D.11-1j and D.11-1k. The segment includes Devers Substation, the 220 kV transmission lines, telecommunications lines, access roads, and the Devers staging yard. Segment 6 passes through the City of Palm Springs, the County of Riverside, and on BLM lands; the entire segment is in Riverside County. Existing land uses are primarily residential and open space. The Devers staging yard is currently being used as a staging area for an electrical project.

General Plan. The City of Palm Springs General Plan designates a portion of Segment 6 as public facility. The County of Riverside General Plan designates residential, open space, and public facility uses. BLM designates a section of Segment 6 as open space. The Devers staging yard is designated as public facility by the County of Riverside.

Zoning. The City of Palm Springs zones a portion of Segment 6 as industrial. The County of Riverside zones portions of the segment as residential, controlled development area, and industrial. BLM areas within Segment 6 are zoned residential and controlled development area. The Devers staging yard is zoned industrial by the County of Riverside. Segment 6 zoning designations are shown in Figure D.11-2j and Figure D.11-2k.

D.11.1.3 Environmental Setting for Connected Actions

The study area for land use and BLM lands is the locations of the connected actions described in Section B.7.2, as well as the land uses adjacent to the connected actions. Where applicable, land use setting information already provided in Section D.11.1.2 is briefly summarized below with references to the specific sections. Additional setting information has been provided for areas not already covered under the setting discussion in D.11.1.2.

Desert Center Area. Projects in the Desert Center area would include the approximately 4,000-acre Palen Solar Power Project and the 1,208-acre Desert Harvest Project, both of which are located on BLM-administered land, and approximately 2,400 acres for two other solar PV developments at unspecified locations. This region of the Colorado Desert is a relatively flat area known as the Chuckwalla Valley. It is generally undeveloped with the exception of high-voltage transmission lines that cross the area (CEC, 2013). Within the area, populated locations include the unincorporated town of Desert Center, the Lake Tamarisk Park development, and Eagle Mountain Village. The nearest incorporated population centers are outside of the area, and include Coachella, Indio, and Blythe in Riverside County, and Twentynine Palms in San Bernardino County.

As discussed in Section B.7.2.1, two known projects in the Desert Center Area are considered connected actions to the Proposed Project: the Desert Harvest Solar Project and the Palen Solar Power Project. In addition to the communities at and near Desert Center, area development includes the now operational 550 MW Desert Sunlight Solar Farm. The Desert Harvest Solar Project would be located chiefly on BLM land; therefore, the BLM's CDCA MUC designations and plan elements would apply. Other existing land uses in the vicinity of the solar facility include a number of easements, ROWs, and claims related to utility corridors, transmission lines, telephone lines, pipelines, railroads, roads, water transmission facilities, and mining claims (BLM, 2012).

The Palen project site is 0.25 miles north of I-10 and 10 miles east of Desert Center, approximately halfway between the Cities of Indio and Blythe, in Riverside County, California. The site is on BLM lands within a BLM-designated Solar Energy Zone (SEZ); therefore, the BLM's CDCA MUC designations and plan elements would apply, along with the guidelines applicable to the SEZ. The land surrounding the site is undeveloped BLM land.

Blythe Area. The 3 connected solar PV projects in the Blythe area would cover approximately 4,200 acres. The area overall is bounded by the Big Maria Mountains on the northwest, the McCoy Mountains on the west, the Mule Mountains on the southwest, and the Colorado River on the east. The mountain ranges trend northwest to southeast, creating a natural barrier between the Colorado River and the greater Colorado Desert. Land uses in the Blythe area include private undeveloped and agricultural lands as well as BLM-administered lands in eastern Riverside County. Other land uses in this area includes residences, the Blythe Airport, the Blythe Generating Plant, electrical transmission lines, and commercial businesses. The City of Blythe is in the eastern portion of the area, surrounded by agriculture. Depending on the locations of the solar projects, the individual sites could be under the jurisdiction of Riverside County and/or BLM and the plans, policies, and land use designations of the applicable BLM or County plans would apply.

D.11.2 Applicable Regulations, Plans, and Standards

D.11.2.1 Federal

Federal Land Policy Management Act

The Federal Land Policy Management Act of 1976 (FLPMA) is administered by the BLM with the goals of preserving and promoting multiple use principles for federal public lands. FLPMA requires federal management agencies to coordinate with other federal agencies, states, and local governments regarding land use planning and management (Title 43, United States Code Annotated Section 1712[c][9]).

Federal Aviation Regulations

The Federal Aviation Administration's (FAA) Federal Aviation Regulations (Title 14 Part 77) include restrictions on structures taller than 200 feet or within 20,000 feet of an airport. The Proposed Project is approximately 1 mile from the San Bernardino International Airport and 0.6 miles from the Banning Municipal Airport. Federal Aviation Regulations include standards intended to: (1) evaluate the effects of construction or alteration of structure on airport operating procedures; (2) evaluate potential hazards to air navigation; and (3) identify measures to enhance safety. The FAA requires filing of FAA form 7460-1 (Notice of Proposed Construction or Alteration) when requested by the FAA or if any of the following criteria are met for any construction or alteration:

- More than 200 feet high
- Greater height than an imaginary surface extending outward and upward at one of the following slopes:
  - 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport with at least one runway more than 3,200 feet in actual length, excluding heliports.
  - 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport specified with its longest runway no more than 3,200 feet in actual length, excluding helicopters.
  - 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport.
- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the standards presented above
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Bureau of Land Management

BLM has jurisdiction over rights-of-way on federal public lands in the project study area. SCE has submitted an application to BLM to amend its existing right-of-way authorization. BLM will make a determination regarding consistency with its land use and management plans: South Coast Resource Management Plan (1994), Draft South Coast Regional Management Plan and Environmental Impact Statement (2011), and the California Desert Conservation Area Plan of the BLM's California Palm Springs–South Coast Field Office.

BLM South Coast Resource Management Plan

The existing and Draft South Coast Resource Management plans require that new utility rights-of-way on BLM land be avoided if feasible, especially in recreational areas. BLM lands in the project study area occur on or near Segments 5 and 6, as shown in Figure D.15-1j and Figure D.15-1k, found in Section D.15 Recreation. The Draft South Coast Resource Management Plan indicates that pre-existing permits, leases, and rights-of-way would be protected.

BLM California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) was established as part of the passage of FLPMA in 1976. The CDCA covers 12,000,000 acres of BLM-administered public lands. There are five recovery units in the CDCA: upper Virginia River, Eastern Mojave, Northwestern Mojave, Western Mojave, and Colorado Desert. The eastern section of the Proposed Project is within the Colorado Desert recovery unit.

The CDCA prioritizes preservation of threatened and endangered species, including desert tortoise, and designates Desert Wildlife Management Areas (DWMA), but the project area is not within a DWMA.

The CDCA includes designation of lands in four Multiple Use Classes (MUC; BLM, 2015), as defined below. The Proposed Project does not fall into any of these Classes.

- Class C (controlled use): About 4 million acres including 69 wilderness areas totaling 3,667,020 acres. These lands are to be preserved in a natural state and access is generally limited to non-motorized, non-mechanized means (i.e., by foot or horseback).
- Class L (limited use): About 4 million acres that are managed to protect sensitive, natural, scenic, ecological, and cultural resource values. They provide for generally lower-intensity, carefully controlled multiple uses that do not significantly diminish resource values.
- Class M (moderate use): About 1.5 million acres managed in a controlled balance between higher intensity use and protection. A wide variety of uses, such as mining, livestock grazing, recreation, energy, and utility development are allowed. Any damage caused by permitted uses must be mitigated.
- Class I (intensive use): About 500,000 acres are managed for concentrated use to meet human needs. Reasonable protection is provided for sensitive natural values, and mitigation of impacts and rehabilitation of impacted areas will occur when possible.

D.11.2.2 State

California Public Utilities Commission

The CPUC is charged with the regulation of certain investor-owned public utilities within the State of California, including electric transmission facilities. The CPUC is the Lead Agency for CEQA review of the Proposed Project and has authority for project approval. The CPUC will ensure that the Proposed Project complies with local regulations to the greatest degree feasible to minimize project conflicts with local conditions, in accordance with General Order 131-D.

D.11.2.3 Local

The California Public Utilities Commission (CPUC) regulates and authorizes the construction of investor-owned utility facilities and has jurisdiction over the siting and design of the Proposed Project. Although these projects are exempt from local land use and zoning regulations and permitting, CPUC's General Order No. 131-D, Section III.C requires that the utility "communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits." Appendix 9 (Policy Screening Report) identifies county and city plans and policies regarding land use and resources of concern to planners. The Appendix indicates policies that are potentially applicable to the Proposed Project and whether the project would be consistent with the plan or policy. These policies are numerous and are not repeated here.

Morongo Indian reservation

The Proposed Project would pass through approximately 8 miles of the tribal trust lands that are part of the Morongo Indian reservation east of the City of Banning. Five of the 8 miles would use the existing transmission corridor that SCE has used since 1945 and has subsequently expanded. Three miles would be in a new corridor between Malki Road and the western boundary of the reservation. Use of the Morongo reservation's trust lands is subject to approval by the Morongo Band's General Membership, which includes all enrolled adult voting members. With limited exceptions, the Morongo Band does not release its internal laws to the public. The 2011 Morongo Band Indian reservation General Plan Land Use Element designates six land use categories throughout the reservation: commercial, culturally sensitive, industrial, mixed-use, open space, and residential. The existing SCE ROW is near the center of the Central Morongo Community Area. The Proposed Project would pass through the same land use designations, but would be farther south of the Central Morongo Community Area.

In November 2012, the Morongo Band's General Membership consented to the Bureau of Indian Affairs' grants to SCE of the rights-of-way and easements necessary for SCE to continue operating its existing 220 kV facilities on the Morongo reservation and to replace and upgrade those facilities with the Proposed Project. The Morongo Band's approval of these grants of rights-of-way and easements includes relocating approximately 3 miles of the existing corridor west of Malki Road into a new corridor.

City of Banning Airport Land Use Plan

The Banning Municipal Airport is identified as a general aviation utility airport in the 2007 Banning Municipal Airport Master Plan Update. The airport serves as a base for local pilots and hosts recreational flying, flight training, and emergency/medical transport. The Proposed Project would not pass through airport property or the runway protection zone. However, a portion is located in the FAR Part 77 Conical Surface Limits area of the Banning Municipal Airport Master Plan Update.

D.11.3 Environmental Impacts of the Proposed Project

D.11.3.1 Approach to Impact Assessment

This analysis is based largely on assessment of land use plans and policies in the Proposed Project area. There are no specific metrics for analysis of land use impacts.

D.11.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures (APMs) related to land use, and no APMs relevant to other issue areas are addressed in this section.

D.11.3.2 Impact Criteria

The Proposed Project would generally occur within an existing utility corridor and new areas of corridor would be in undeveloped areas and would not physically divide an existing community. Potential conflicts with applicable habitat conservation plans or natural community conservation plans are addressed in Section D.4 (Biological Resources – Vegetation) and Section D.5 (Biological Resources – Wildlife) and are not considered further in this section.

As noted in Section D.11.2.2 above, the CPUC has responsibility for and jurisdiction over transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. Therefore, conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect would not apply. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process. To that end, Appendix 9 provides an evaluation of local plans and policies relative to the Proposed Project and identifies where they are consistent and where there may be an inconsistency. Appendix 9 (Policy Screening Report) provides a detailed a review of project consistency with local land use plans and policies.

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). For the purposes of this Land Use analysis, the project or an alternative would impact land use and BLM realty if the Proposed Project would:

- Directly or indirectly disrupt an established or recently approved land use.

D.11.3.3 Impacts and Mitigation Measures

Impact LU-1: Project would disrupt an established or recently approved land use

Because construction and operation of the Proposed Project would occur largely within an existing utility corridor, the severity of environmental impacts related to established land uses would be much less than would occur from establishment of a new corridor. The existing WOD corridor traverses a wide range of uses, including but not limited to residential, commercial, agricultural, recreation, and open space land uses.

All substation-related work would take place within existing substation walls or fence lines. Existing structures and existing conductor would be removed and replaced within the existing ROW, except for an approximately 3-mile portion of Segment 5 on the Morongo reservation. Construction activities would involve the use of one or more of the possible temporary staging yards listed in Table B-5 (Potential Staging Yard Locations) and shown in Figure B-16 (Proposed Staging Yard Locations). Staging yards would cover 3 to 20 acres and would be restored to pre-construction conditions (or other conditions agreed to by the landowner) after construction is completed.

Proposed Project construction would affect established recreational and agricultural land uses in several areas of the project corridor. The City of Beaumont uses a portion of the corridor for public recreation; the County of Riverside uses the existing ROW access roads as part of its trail network; and the City of Loma Linda has incorporated a trail within the corridor south of Redlands Boulevard. Access to these recreation areas would be temporarily restricted during construction. See Section D.15 (Recreation) for more detail on potential recreation impacts. Impacts to existing agricultural uses are addressed in Section D.6 (Agriculture). Potential impacts on existing public services near the project study area are assessed in Section D.17 (Utilities and Public Services).

In addition to temporarily eliminating some recreational and agricultural land uses in the project corridor, construction of the Proposed Project would have adverse effects on existing land uses through increasing the amount of activity along SCE's ROW and creating temporary nuisance impacts (e.g., noise, traffic, visual impacts). These impacts would be reduced by the implementation of Mitigation Measure LU-1a (Prepare construction notification plan). In addition, mitigation measures identified below for other specific resource topics would help reduce this impact.

Operation of the Proposed Project would generally be controlled remotely, but would include some continued on-site work as necessary. Most regular operation and maintenance activities would be performed from existing access roads, although some repairs could occur in undisturbed areas. Ongoing effects on existing land uses during operations and maintenance would be temporary and would involve very minimal disruption.

Mitigation Measure for Impact LU-1: Project would disrupt an established or recently approved land use

LU-1a **Prepare construction notification plan.** Sixty days prior to construction, SCE shall prepare and submit a Construction Notification Plan to the CPUC and BLM for approval. The Plan shall identify the procedures to ensure that SCE will inform property and business owners of the location and duration of construction, identify approvals that are needed prior to posting or publication of construction notices, and include template copies of public notices and advertisements (i.e., formatted text). The details of notification, as described below, may be modified in consultation with CPUC and BLM as warranted by circumstances. To ensure effective notification of construction activities, the plan shall address at a minimum the following components:

Public notice mailer. No less than 15 days prior to construction that would affect property access, a public notice mailer shall be distributed. The notice shall identify construction activities that would restrict, block, or require a detour to access existing residential properties, retail and commercial businesses, wilderness and recreation facilities, and public facilities (e.g., schools and memorial parks). The notice shall state the type of construction activities that will be conducted, and the location and duration of construction. SCE shall mail the notice to all residents or property owners within 300 feet of the right-of-way and to specific public agencies with facilities that could be impacted by construction. If construction delays of more than seven days occur, SCE shall notify residents or property owners of the delay and provide an estimated of when construction would occur.

Newspaper advertisements. Fifteen days prior to construction, within a route segment a newspaper advertisement shall be placed in local newspapers and bulletins of general circulation in the area. The advertisement shall state when and where construction will occur and provide information on the public liaison person and hotline identified below. If construction is delayed as noted above, an additional round of newspaper ads shall be placed to discuss the status and schedule of construction.

Public venue notices. Thirty days prior to construction, notice of construction shall be posted at public venues such as trail crossings, rest stops, desert centers, resource management offices (e.g., Bureau of Land Management field offices, San Bernardino National Forest Ranger Station), and other public venues to inform residents and visitors of the purpose and schedule of construction activities. For public trail closures, SCE shall post information regarding the closure and any related trail detour at applicable resource management offices and post the notice within 2 miles north and south of any such point of trail closure and detour. For recreation facilities, the notice shall be posted along the access routes to known recreational destinations that would be restricted, blocked, or detoured and shall provide information on alternative recreation areas that may be used during the closure of these facilities.

Public liaison person and toll-free information hotline. SCE shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring property owners about noise, dust, and other construction disturbance. Procedures for reaching the public liaison officer via telephone or in person shall be included in notices distributed to the public. SCE shall also establish a toll-free telephone number for receiving questions or complaints during construction and shall develop procedures for responding to callers. Procedures for handling and responding to calls shall be addressed in the Construction Notification Plan. SCE shall provide CPUC and BLM an itemized monthly summary of complaints and inquiries received and their resolution. This shall include the name and telephone number of the caller, if provided, and the location and resolution of the complaint or inquiry.

The full text of the following mitigation measures is found in the sections noted in parentheses.

- AG-3a: Establish agreement and coordinate construction activities with agricultural landowners (Section D.2.3.3, Agriculture)
- N-1a: Implement best management practices for construction noise (Section D.13.3.3, Noise)

- N-1b: Implement a helicopter noise control strategy (Section D.13.3.3, Noise)
- R-1a: Coordinate construction schedule and activities with the authorized officer for the recreation area (Section D.15.3.3, Recreation)
- R-1b: Coordinate with local agencies to identify alternative recreation areas (Section D.15.3.3, Recreation)
- T-1b: Prepare Traffic Control Plans (Section D.16.3.3, Transportation and Traffic)
- T-1c: Restrict lane closures (Section D.16.3.3, Transportation and Traffic)
- T-1d: Minimize disruption of bus and transit service (Section D.16.3.3, Transportation and Traffic)
- T-1e: Ensure pedestrian and bicycle circulation and safety (Section D.16.3.3, Transportation and Traffic)
- T-1f: Provide access to property (Section D.16.3.3, Transportation and Traffic)
- T-3a: Avoid conflicts with planned transportation improvements (Section D.16.3.3, Transportation and Traffic)
- T-6a: Notify public of short-term elimination of public parking spaces (Section D.16.3.3, Transportation and Traffic)
- T-7a: Prepare and implement a helicopter use plan (Section D.16.3.3, Transportation and Traffic)
- VR-1a: Screen construction activities from view (Section D.13.3.3, Noise)
- VR-2a: Minimize vegetation removal and ground disturbance (Section D.18.3.3, Visual Resources)
- VR-3a: Reduce color contrast of retaining walls and land scars. (Section D.18.3.3, Visual Resources)
- VR-4a: Minimize in-line views of retaining walls and land scars (Section D.18.3.3, Visual Resources)
- VR-5a: Prohibit construction marking of natural features (Section D.18.3.3, Visual Resources)
- VR-7a: Minimize night lighting at project facilities (Section D.18.3.3, Visual Resources)
- VR-9a: Minimize visual contrast in project design (Section D.18.3.3, Visual Resources)
- VR-10a: Treat structure surfaces (Section D.18.3.3, Visual Resources)

D.11.3.4 Environmental Impacts for Connected Actions

Impact LU-1: Project would disrupt an established or recently approved land use

Project activities associated with the connected actions would affect land uses and BLM lands in the Desert Center and Blythe areas. Undeveloped desert land is the dominant characteristic of land uses surrounding the projects. However, other existing land uses occur, including rural residences, agricultural production, recreational resources, and mineral production. Construction activities would have adverse effects on existing land uses, particularly occupied land uses, by increasing the level of activity and creating temporary impacts (e.g., noise, traffic, visual impacts). These impacts would be reduced by the implementation of Mitigation Measure LU-1a (Prepare construction notification plan). In addition, as applicable, mitigation measures identified above for the Proposed Project would help reduce this impact.

Routine operation and maintenance activities would be performed within a project site. Ongoing effects on existing land uses during operations and maintenance would be temporary and would involve minimal disruption.

D.11.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.11.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Land use and BLM realty within the ROW are described by segment in Section D.11.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.11.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

One impact related to land use and BLM realty was identified for the Proposed Project. This impact also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5.

Impact LU-1: Project would disrupt an established or recently approved land use

Because construction and operation of the Proposed Project would occur largely within an existing utility corridor, the severity of environmental impacts related to established land uses would be much less than would occur from establishment of a new corridor. The existing WOD corridor traverses a wide range of uses, including but not limited to residential, commercial, agricultural, recreation, and open space land uses.

In general, the relocated towers under this alternative would be moved approximately 50 feet farther from the southern edge of the ROW. The minor adjustment to the location of these towers would not lead to a more extensive or more severe disruption to an established or recently approved land use compared to the Proposed Project. The same as for the Proposed Project, this alternative would disrupt established recreational and agricultural land uses in several areas of the project corridor.

The City of Beaumont uses a portion of the corridor for public recreation. The County of Riverside and the City of Loma Linda have incorporated trails within the corridor. Access to these recreation areas would be temporarily restricted during construction. A small amount of agriculture would be adversely affected by construction of this alternative. Adverse effects to existing agricultural uses are addressed in Section D.2 (Agriculture). In addition to temporarily eliminating some recreational and agricultural land uses in the project corridor, construction of this alternative would have adverse effects on existing land uses through the creation of temporary nuisance (e.g., noise, traffic, visual impacts). These adverse effects would be reduced through implementation of the mitigation measures listed below. The full text of all mitigation measures referenced is found in the sections noted in parentheses.

- LU-1a: Prepare construction notification plan (Section D.11.3.3)
- AG-3a: Establish agreement and coordinate construction activities with agricultural landowners (Section D.2.3.3, Agriculture)
- N-1a: Implement best management practices for construction noise (Section D.13.3.3, Noise)
- N-1b: Implement a helicopter noise control strategy (Section D.13.3.3, Noise)
- R-1a: Coordinate construction schedule and activities with the authorized officer for the recreation area (Section D.15.3.3, Recreation)
- R-1b: Coordinate with local agencies to identify alternative recreation areas (Section D.15.3.3, Recreation)
- T-1b: Prepare Traffic Control Plans (Section D.16.3.3, Transportation and Traffic)
- T-1c: Restrict lane closures (Section D.16.3.3, Transportation and Traffic)
- T-1d: Minimize disruption of bus and transit service (Section D.16.3.3, Transportation and Traffic)
- T-1e: Ensure pedestrian and bicycle circulation and safety (Section D.16.3.3, Transportation and Traffic)

- T-1f: Provide access to property (Section D.16.3.3, Transportation and Traffic)
- T-3a: Avoid conflicts with planned transportation improvements (Section D.16.3.3, Transportation and Traffic)
- T-6a: Notify public of short-term elimination of public parking spaces (Section D.16.3.3, Transportation and Traffic)
- T-7a: Prepare and implement a helicopter use plan (Section D.16.3.3, Transportation and Traffic)
- VR-1a: Screen construction activities from view (Section D.13.3.3, Noise)
- VR-2a: Minimize vegetation removal and ground disturbance (Section D.18.3.3, Visual Resources)
- VR-3a: Reduce color contrast of retaining walls and land scars. (Section D.18.3.3, Visual Resources)
- VR-4a: Minimize in-line views of retaining walls and land scars (Section D.18.3.3, Visual Resources)
- VR-5a: Prohibit construction marking of natural features (Section D.18.3.3, Visual Resources)
- VR-7a: Minimize night lighting at project facilities (Section D.18.3.3, Visual Resources)
- VR-9a: Minimize visual contrast in project design (Section D.18.3.3, Visual Resources)
- VR-10a: Treat structure surfaces (Section D.18.3.3, Visual Resources)

With implementation of the mitigation measures listed above, this adverse effect would be minor.

D.11.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

One impact was identified under the Proposed Project for land use and BLM realty. This impact also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5.

Impact LU-1: Project would disrupt an established or recently approved land use

The short underground segment in this alternative would create slightly more severe construction disruption than would occur with the Proposed Project's overhead poles in the Iowa Street area. There would be more noise, traffic, and air emissions impacts associated with construction of the underground segment. These adverse effects would be reduced through implementation of mitigation measures. The applicable mitigation measures are listed in Section D.11.4.1 (Tower Relocation Alternative). With implementation of the mitigation measures listed, this adverse effect would be minor.

D.11.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

One impact related to land use and BLM realty was identified for the Proposed Project. This impact also would apply to the Phased Build Alternative.

Impact LU-1: Project would disrupt an established or recently approved land use

Construction and operation of the Proposed Project and of the Phased Build Alternative would occur largely within an existing utility corridor. Therefore, the severity of environmental impacts related to established land uses would be much less than would occur if a new corridor were established. The existing WOD corridor traverses or is adjacent to a wide range of uses, including residential, commercial, agricultural, recreation, and open space land uses.

All substation-related work would take place within existing substation walls or fence lines. Existing structures and existing conductor would be removed and replaced within the existing transmission ROW, except for an approximately 3-mile portion of Segment 5 on the Morongo reservation. Construction activities would involve the use of one or more of the possible temporary staging yards listed in Table B-5 (Potential Staging Yard Locations) and shown in Figure B-16 (Proposed Staging Yard Locations). Staging yards would cover 3 to 20 acres and would be restored to pre-construction conditions (or other conditions agreed to by the landowner) after construction is completed.

Construction would affect established recreational and agricultural land uses in several areas of the project corridor. The City of Beaumont uses a portion of the corridor for public recreation; the County of Riverside uses the existing ROW access roads as part of its trail network; and the City of Loma Linda has incorporated a trail within the corridor south of Redlands Boulevard. Access to these recreation areas would be temporarily restricted during construction. See Section D.15 (Recreation) for more detail on potential recreation impacts. Impacts to existing agricultural uses are addressed in Section D.6 (Agriculture). Potential impacts on existing public services near the project study area are assessed in Section D.17 (Utilities and Public Services).

In addition to temporarily eliminating some recreational and agricultural land uses in the project corridor, construction of either the Proposed Project or the Phased Build Alternative would have adverse effects on existing land uses through increasing the amount of activity along SCE's ROW and creating temporary nuisance impacts (e.g., noise, traffic, visual impacts). These impacts would be reduced by the implementation of Mitigation Measure LU-1a (Prepare construction notification plan). In addition, mitigation measures identified below for other specific resource topics would help reduce this impact.

Operation of the transmission system would generally be controlled remotely, but would include some continued on-site work as necessary. Most regular operation and maintenance activities would be performed from existing access roads, although some repairs could occur in undisturbed areas. Ongoing effects on existing land uses during operations and maintenance would be temporary and would involve very minimal disruption.

The Phased Build Alternative and the Proposed Project would occur in the same ROW, where there are existing transmission facilities already in place. As with the Proposed Project, this alternative would disrupt established recreational and agricultural land uses in several areas of the project corridor. Access to these areas would be temporarily restricted during construction. A small amount of agriculture would be adversely affected by construction of this alternative. Adverse effects to existing agricultural uses are addressed in Section D.2 (Agriculture). In addition to temporarily eliminating some recreational and agricultural land uses in the project corridor, construction of this alternative would have adverse effects on existing land uses through the creation of temporary nuisance (e.g., noise, traffic, visual impacts). Because the alternative would require less construction than the Proposed Project, these impacts would be less. Less demolition of towers would be required and less tower construction would occur. The adverse effects that would occur would be reduced through implementation of mitigation measures. The applicable mitigation measures are listed in Section D.11.4.1 (Tower Relocation Alternative). The full text of the measures is found in the sections noted in parentheses. With implementation of the mitigation measures listed, this adverse effect would be minor.

D.11.5 Environmental Impacts of No Action Alternative

D.11.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

Other specific impacts of concern to land use in general (e.g., visual resources, noise, traffic, and air quality) are addressed in the individual resource sections of this EIS.

Devers to Beaumont Substation. Much of the land is open space and recreation, with concentrations of residential and commercial/industrial uses. Residential development is primarily in the unincorporated Riverside County community of Cabazon (through Cabazon Estates), and south of Banning and Beaumont. Leaving Devers Substation crosses private land and BLM-managed public lands, before entering the Santa Rosa and San Jacinto National Monument and National Forest lands. Adding a new line or circuit in the Devers-Valley corridor would require a Special Use authorization from the USDA Forest Service where it would be on National Forest System lands. After leaving the mountains and federal lands, the route would pass through Cabazon Estates, with houses and lots on either side of SCE's ROW. Next, the route crosses through open land with scattered residential uses. South of Banning it passes in the vicinity of commercial and institutional uses as well as open and grazing land. South of Beaumont, it passes south of a residential development and along the northern edge of the Potrero ACEC, where it turns north and leaves the Devers-Valley ROW. In the analysis of the Devers to Valley alignment in the DPV2 EIR/EIS, impacts to land use that would result in temporary land us impacts or permanent preclusion of a land use were less than significant or less than significant with mitigation.

The new 500 kV line would turn north into the new Beaumont Substation site in new ROW, and one of the existing D-V 500 lines also would loop into the substation. Impacts would be similar to those that occurred during construction of the Devers-Valley No. 2 500 kV transmission line. Disturbance to nearby land uses, particularly residential uses, would require mitigation, such as requiring notices to residents and business of construction plans and coordination of schedules with public and community facilities. Time of day limitation on work and noise and dust abatement may be required. Because the line would be in or adjacent to the existing ROW, impacts such as dividing a community would not occur.

Beaumont Substation. The substation site is in grassland east of SR 79 near Laird Road, between the highway and the 121-acre Childhelp Merv Griffin Village. An existing power line and a commercial property are in open land to the north. To the south of the site is open grassland and the Potrero ACEC. Based on its location, the substation site is not expected to adversely affect adjacent land uses through disturbance or permanent preclusion of use of adjacent lands.

Beaumont to El Casco Substation. Between Beaumont and El Casco Substation, four 220 kV circuits would be installed and would follow the existing 115 kV SCE ROW on two sets of new double-circuit structures. The land uses along the corridor are mostly low-density. They include rural, estate, and very low-density residential uses, open space and agriculture, rural mountainous lands, a freeway, and open space recreation and conservation habitat. As with construction of the 500 kV segment, impacts would be from disturbance associated with construction activities and would be addressed by providing notification of construction plans and coordinating with public and community facilities, as well as measures required for specific impacts such as noise, traffic, and dust.

D.11.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. Much of the land is open space and recreation, with concentrations of residential land uses at the eastern and western ends of the corridor. Residential development is primarily in Perris Valley at the eastern end of the route and the City of Orange at the western end of the route.

The existing 500 kV corridor traverses a wide range of uses, including but not limited to residential, agricultural, recreation, and open space land uses. Construction of this alternative would affect established recreational and agricultural land uses in several areas of the corridor. Agricultural uses are concentrated in the Perris Valley. Recreational areas include the Lake Mathews-Estelle Mountain reserve, the Cleveland National Forest, and Weir Canyon Regional Park. Access to these recreation areas would be temporarily restricted during construction. Adding a new line or circuit in the existing corridor would require a Special Use authorization from the USDA Forest Service where it would be on National Forest System lands.

In addition to temporarily eliminating some recreational and agricultural land uses in the project corridor, construction of this alternative would have adverse effects on existing land uses through increasing the amount of activity along the ROW and creating temporary nuisance impacts (e.g., noise, traffic, visual impacts). These impacts would be reduced by the preparation of a construction notification plan as well as mitigation measures identified for other specific resource topics, including agriculture, noise, recreation, and traffic. Time of day limitation on work and noise and dust abatement may be required. Operation of the new 500 kV circuit would generally be controlled remotely, but would include some continued on-site work as necessary. Most regular operation and maintenance activities would be performed from existing access roads, although some repairs could occur in undisturbed areas. Ongoing effects on existing land uses during operations and maintenance would be temporary.

D.11.6 Mitigation Monitoring, Compliance, and Reporting

Table D.11-3 presents the mitigation monitoring, compliance, and reporting actions for land use and BLM Realty.

Table D.11-3. Mitigation Monitoring Program – Land Use and BLM Realty

MITIGATION MEASURE	**LU-1a: Prepare construction notification plan.** Sixty days prior to construction, SCE shall prepare and submit a Construction Notification Plan to the CPUC and BLM for approval. The Plan shall identify the procedures to ensure that SCE will inform property and business owners of the location and duration of construction, identify approvals that are needed prior to posting or publication of construction notices, and include template copies of public notices and advertisements (i.e., formatted text). The details of notification, as described below, may be modified in consultation with CPUC and BLM as warranted by circumstances. To ensure effective notification of construction activities, the plan shall address at a minimum the following components: **Public notice mailer.** No less than 15 days prior to construction that would affect property access, a public notice mailer shall be distributed. The notice shall identify construction activities that would restrict, block, or require a detour to access existing residential properties, retail and commercial businesses, wilderness and recreation facilities, and public facilities (e.g., schools and memorial parks). The notice shall state the type of construction activities that will be conducted, and the location and duration of construction. SCE shall mail the notice to all residents or property owners within 300 feet of the right-of-way and to specific public agencies with facilities that could be impacted by construction. If construction delays of more than seven days occur, SCE shall notify residents or property owners of the delay and provide an estimated of when construction would occur. **Newspaper advertisements.** Fifteen days prior to construction, within a route segment a newspaper advertisement shall be placed in local newspapers and bulletins of general circulation in the area. The advertisement shall state when and where construction will occur and provide information on the public liaison person and hotline identified below. If construction is delayed as noted above, an additional round of newspaper ads shall be placed to discuss the status and schedule of construction. **Public venue notices.** Thirty days prior to construction, notice of construction shall be posted at public venues such as trail crossings, rest stops, desert centers, resource management offices (e.g., Bureau of Land Management field offices, San Bernardino National Forest Ranger Station), and other public venues to inform residents and visitors of the purpose and schedule of construction activities. For public trail closures, SCE shall post information regarding the closure and any related trail detour at applicable resource management offices and post the notice within 2 miles north and south of any such point of trail closure and detour. For recreation facilities, the notice shall be posted along the access routes to known recreational destinations that would be restricted, blocked, or detoured and shall provide information on alternative recreation areas that may be used during the closure of these facilities. **Public liaison person and toll-free information hotline.** SCE shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring property owners about noise, dust, and other construction disturbance. Procedures for reaching the public liaison officer via telephone or in person shall be included in notices distributed to the public. SCE shall also establish a toll-free telephone number for receiving questions or complaints during construction and shall develop procedures for responding to callers. Procedures for handling and responding to calls shall be addressed in the Construction Notification Plan. SCE shall provide CPUC and BLM an itemized monthly summary of complaints and inquiries received and their resolution. This shall include the name and telephone number of the caller, if provided, and the location and resolution of the complaint or inquiry.
Location	Construction activity in all segments.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits Construction Notification Plan, which identifies complete notification and public inquiry process.

Table D.11-3. Mitigation Monitoring Program – Land Use and BLM Realty

Effectiveness Criteria	Residents, landowners and others potentially impacted are informed of construction activities; procedures are established and documented for taking and responding to construction comments and concerns.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office.
Timing	Plan submitted 60 days prior to construction; public venue notices 30 days prior to construction; public notice mailer and newspaper advertisements 15 days prior to construction. Monthly summary of complaints and their resolution

D.11.7 References

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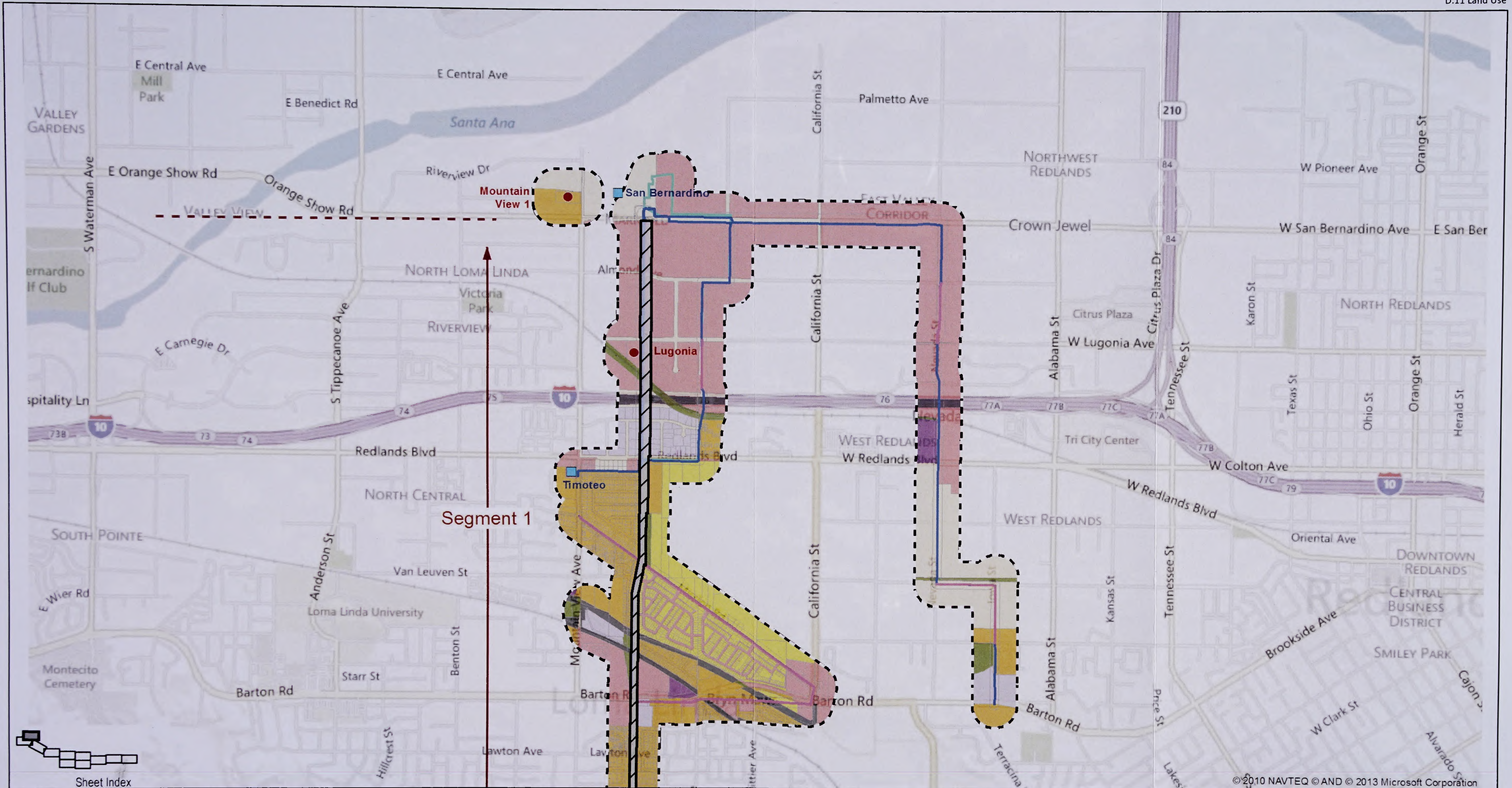
CPUC (California Public Utilities Commission). 2007. SCE El Casco System Project Draft EIR, individual resource Sections. http://www.cpuc.ca.gov/environment/info/aspen/elcasco/toc-deir.htm. Accessed April 15, 2015.

CPUC and BLM. 2006. SCE Devers–Palo Verde 500 kV No. 2 Project EIR/EIS, Sections on West of Devers Alternative. http://www.cpuc.ca.gov/environment/info/aspen/dpv2/toc-deir.htm. Accessed April 15, 2015.

CPUC and USDA (United States Department of Agriculture) Forest Service. 1984. Devers-Valley 500 kV, Serrano-Valley 500 kV and Serrano–Villa Park 220 kV Transmission Line Project Final EIS/EIR. August.

SCE (Southern California Edison). 2013. Proponent's Environmental Assessment for the West of Devers Upgrade Project. Application A.13-10-020. October 25, 2013.



Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use

- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

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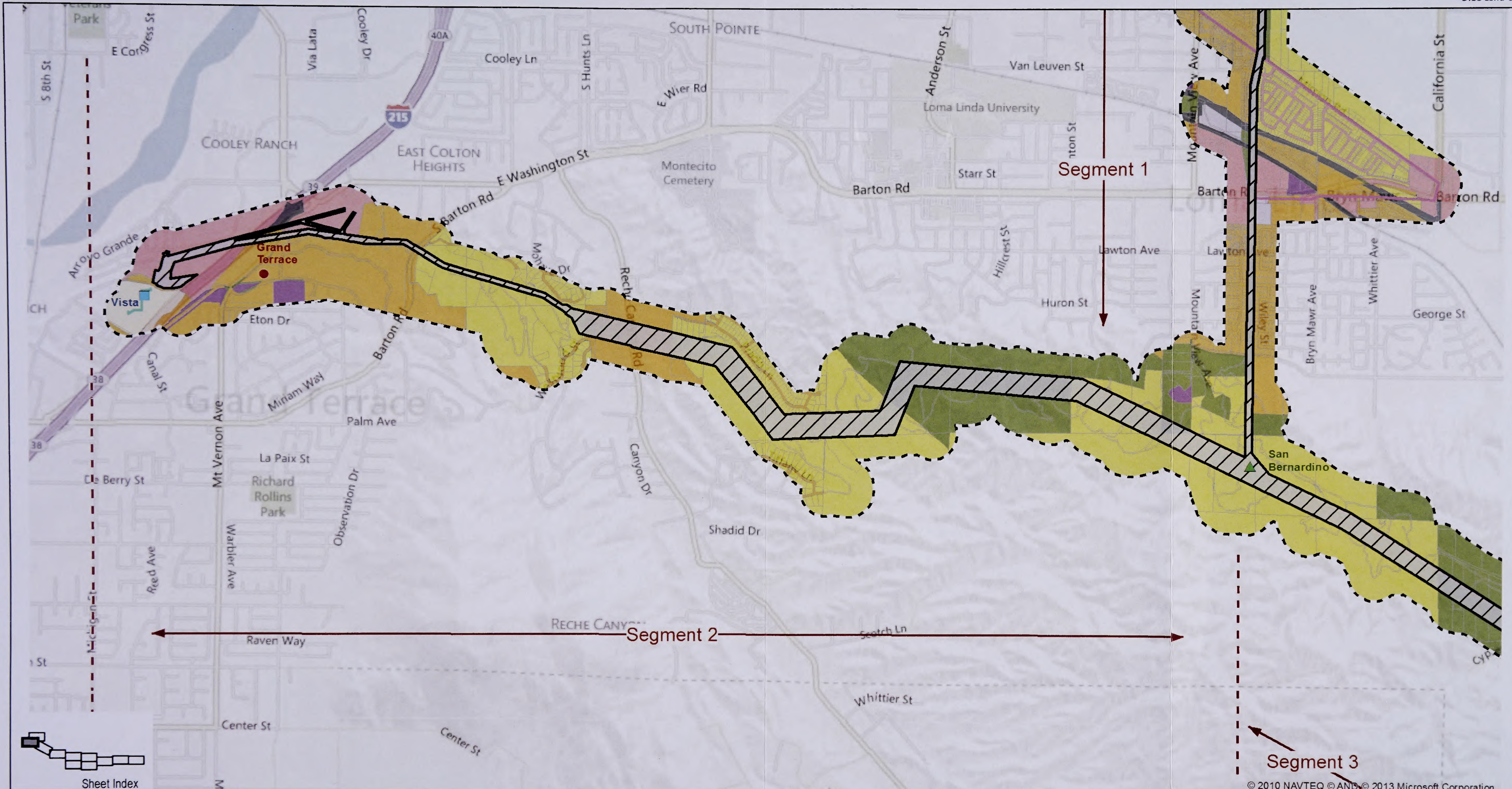
FEET

West of Devers Upgrade Project

Figure D.11-1a

General Plan Land Use, Segment 1

July 2016



Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use
- Agriculture
- Commercial
- Flood Control
- Industrial
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- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

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West of Devers Upgrade Project

Figure D.11-1b

General Plan Land Use, Segment 2

West of Devers Upgrade Project

Figure D.11-1c

General Plan Land Use, Segment 3

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use

- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

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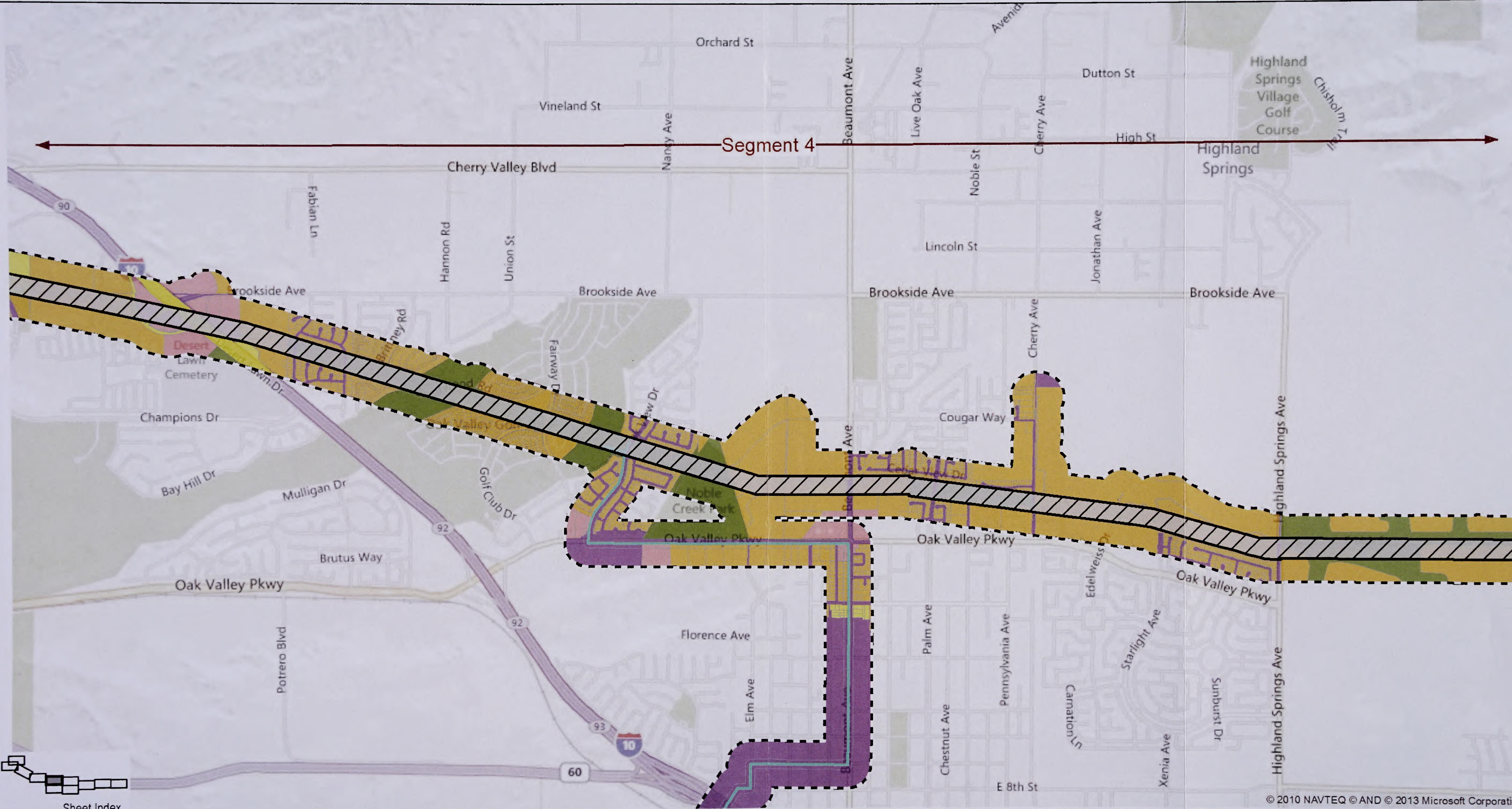
West of Devers Upgrade Project

Figure D.11-1d

General Plan Land Use, Segments 3 & 4



Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use

- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

N

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West of Devers Upgrade Project

Figure D.11-1e

General Plan Land Use, Segment 4

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
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- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use

- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

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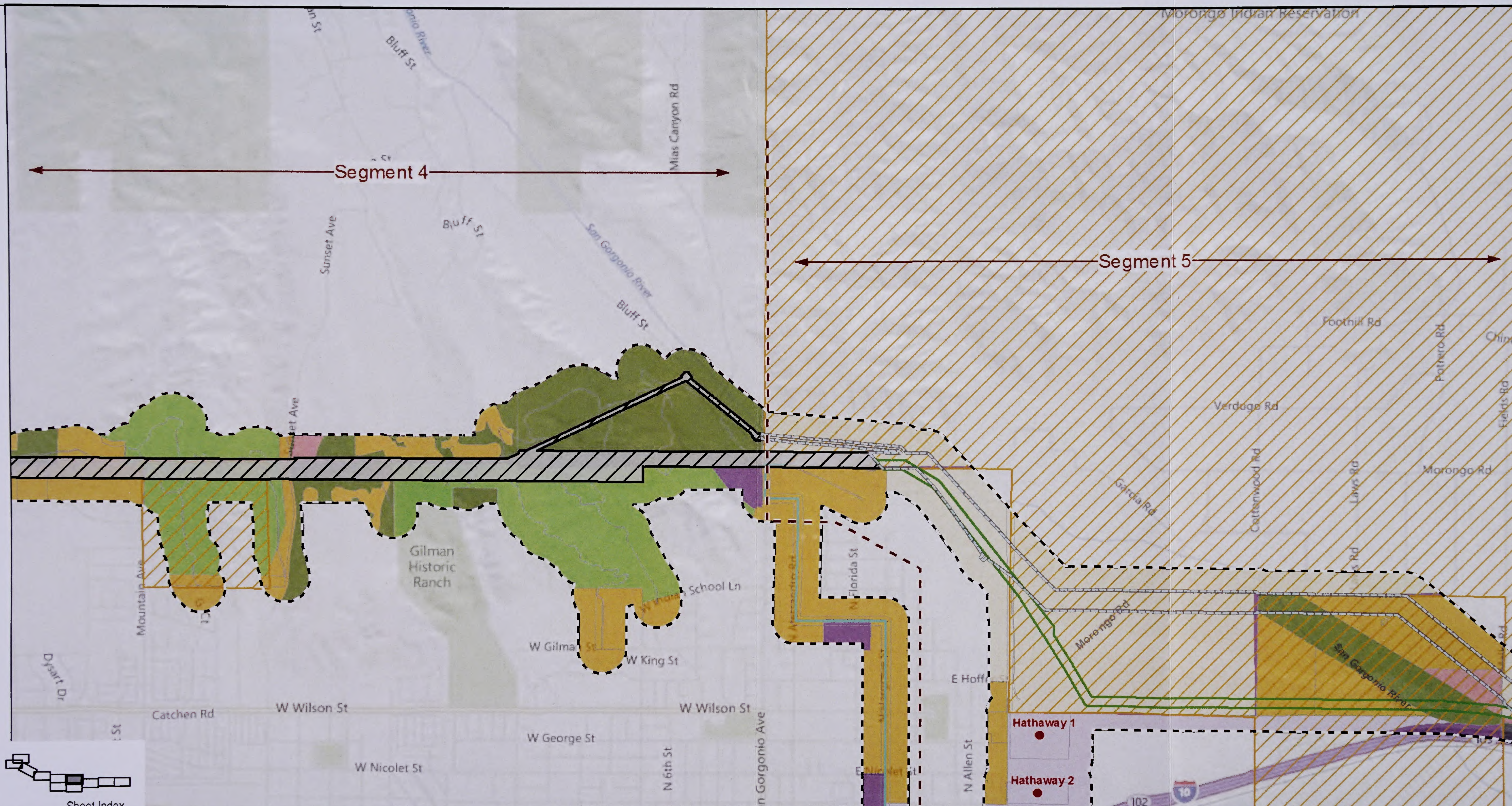
West of Devers Upgrade Project

Figure D.11-1f

General Plan Land Use, Segment 4



Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Alternative Transmission Line Right of Way
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use
- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

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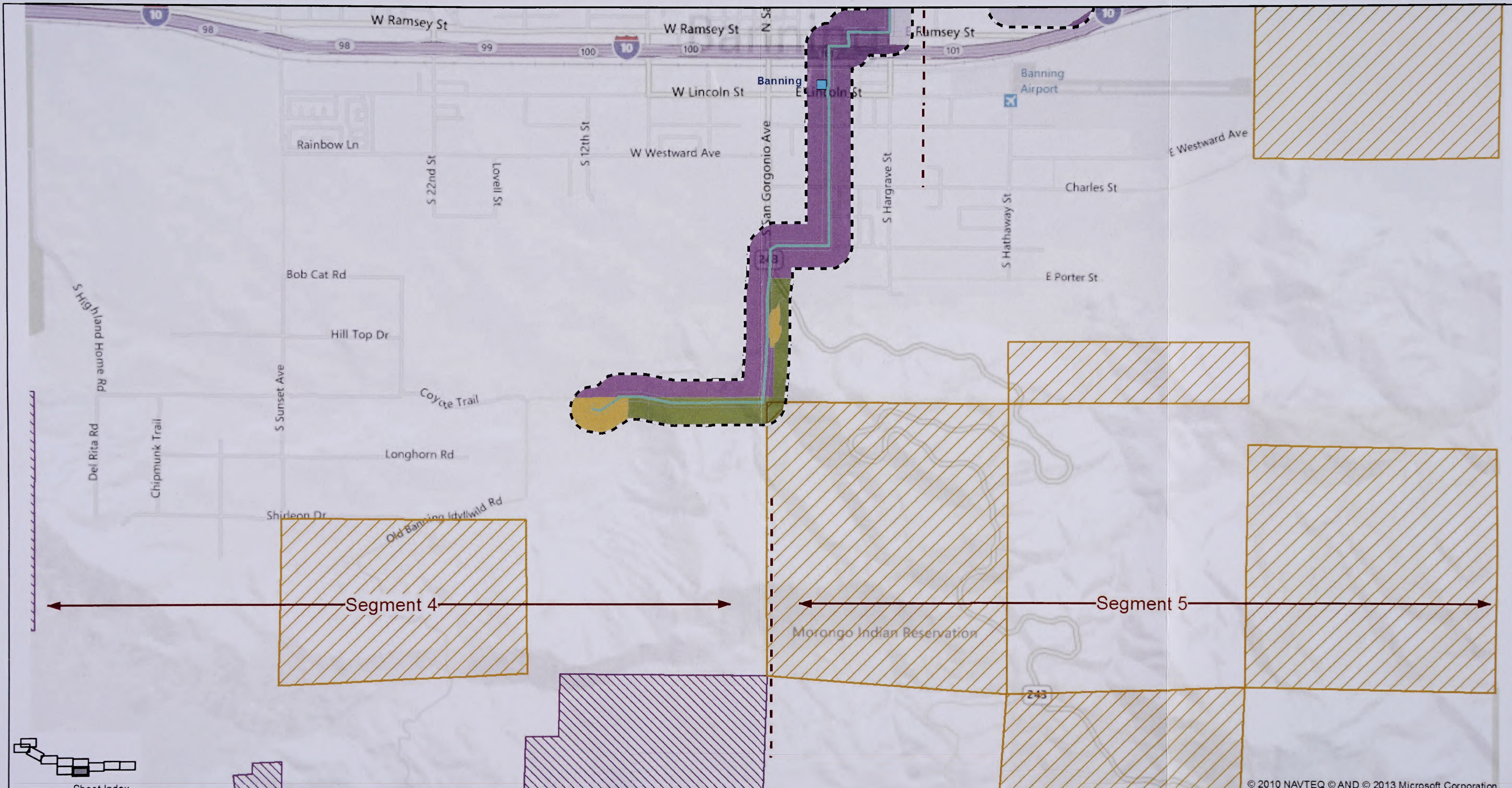
FEET

West of Devers Upgrade Project

Figure D.11-1g

General Plan Land Use, Segments 4 & 5



Source: SCE, 2013.

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LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
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- Substations
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- Telecommunication Line Routes
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- Relocated Distribution Line Routes
- Segment Breaks
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- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use

- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

West of Devers Upgrade Project

Figure D.11-1h

General Plan Land Use, Segments 4 & 5

July 2016

Source: SCE, 2013.

LEGEND
- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Alternative Transmission Line Right of Way
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use
- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

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West of Devers Upgrade Project

Figure D.11-1i

General Plan Land Use, Segment 5

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- U.S. Bureau of Land Management
- Morongo Indian Reservation
- Land Use Study Area

Planned Land Use

- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

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West of Devers Upgrade Project

Figure D.11-1j

General Plan Land Use, Segment 6

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
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- Land Use Study Area

Planned Land Use

- Agriculture
- Commercial
- Flood Control
- Industrial
- Office
- Open Space
- Public Facilities
- Residential
- Specific Plan
- Transportation

N

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.11-1k

General Plan Land Use, Segment 6

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
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- Junction
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- Relocated Distribution Line Routes
- Segment Breaks
- Zoning Study Area

Zoning Designations

- Agriculture
- Commercial
- Controlled Development Area
- Industrial
- Open Space/Parks/Recreation
- Planned Community
- Public Facilities
- Residential
- Specific Plan
- Water

N

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.11-2a

Zoning, Segment 1

Source: SCE, 2013.

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FEET

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
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Zoning Designations

- Agriculture
- Commercial
- Controlled Development Area
- Industrial
- Open Space/Parks/Recreation
- Planned Community
- Public Facilities
- Residential
- Specific Plan
- Water

West of Devers Upgrade Project

Figure D.11-2b

Zoning, Segment 2

July 2016

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
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- Agriculture
- Commercial
- Controlled Development Area
- Industrial
- Open Space/Parks/Recreation
- Planned Community
- Public Facilities
- Residential
- Specific Plan
- Water

West of Devers Upgrade Project

Figure D.11-2c

Zoning, Segment 3

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
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Zoning Designations

- Agriculture
- Commercial
- Controlled Development Area
- Industrial
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- Planned Community
- Public Facilities
- Residential
- Specific Plan
- Water

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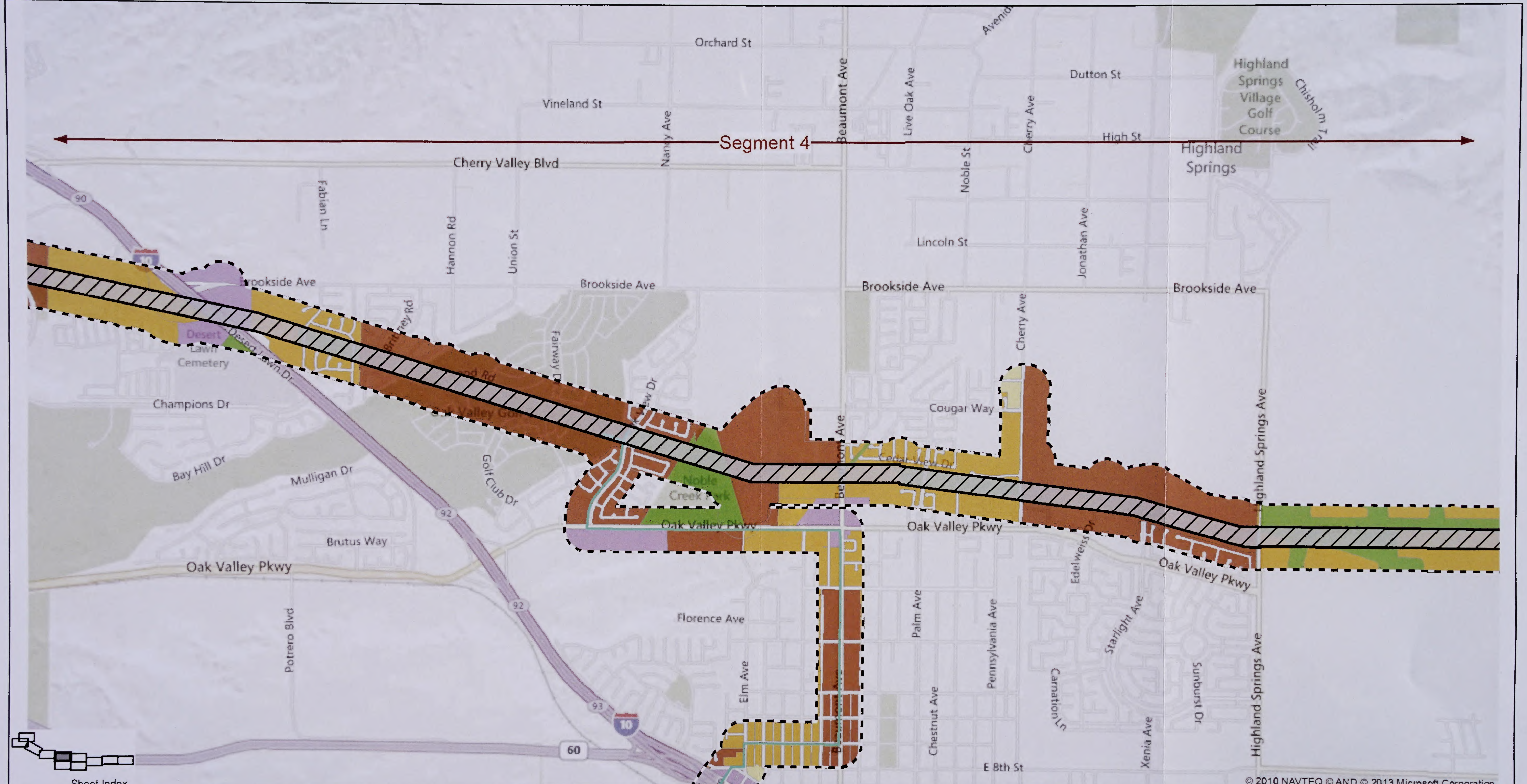
FEET

West of Devers Upgrade Project

Figure D.11-2d

Zoning, Segment 3 & 4



Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
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- Public Facilities
- Residential
- Specific Plan
- Water

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West of Devers Upgrade Project

Figure D.11-2e

Zoning, Segment 4

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
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Zoning Designations

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- Public Facilities
- Residential
- Specific Plan
- Water

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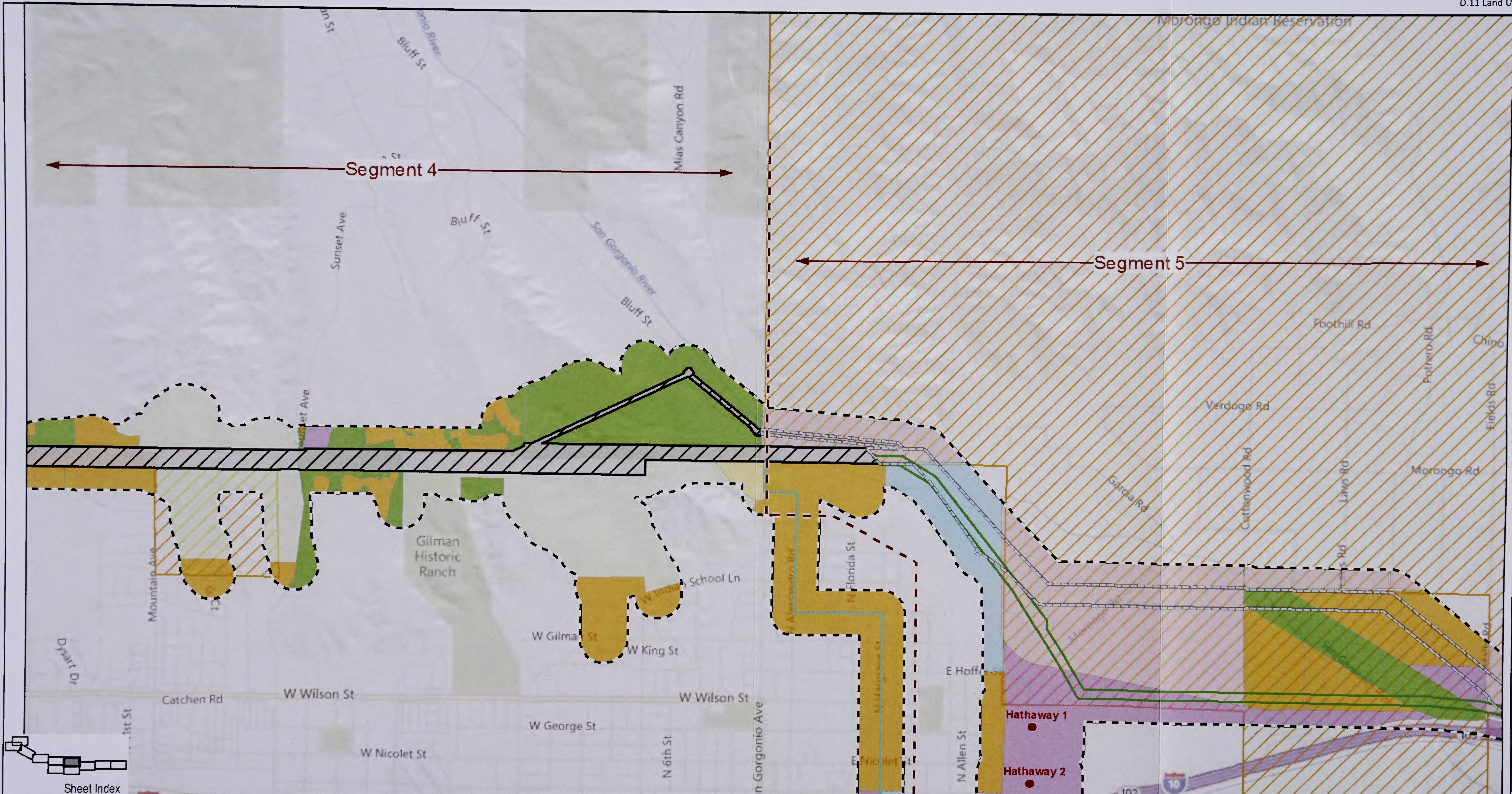
FEET

West of Devers Upgrade Project

Figure D.11-2f

Zoning, Segment 4

July 2016



Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
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Zoning Designations

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- Residential
- Specific Plan
- Water

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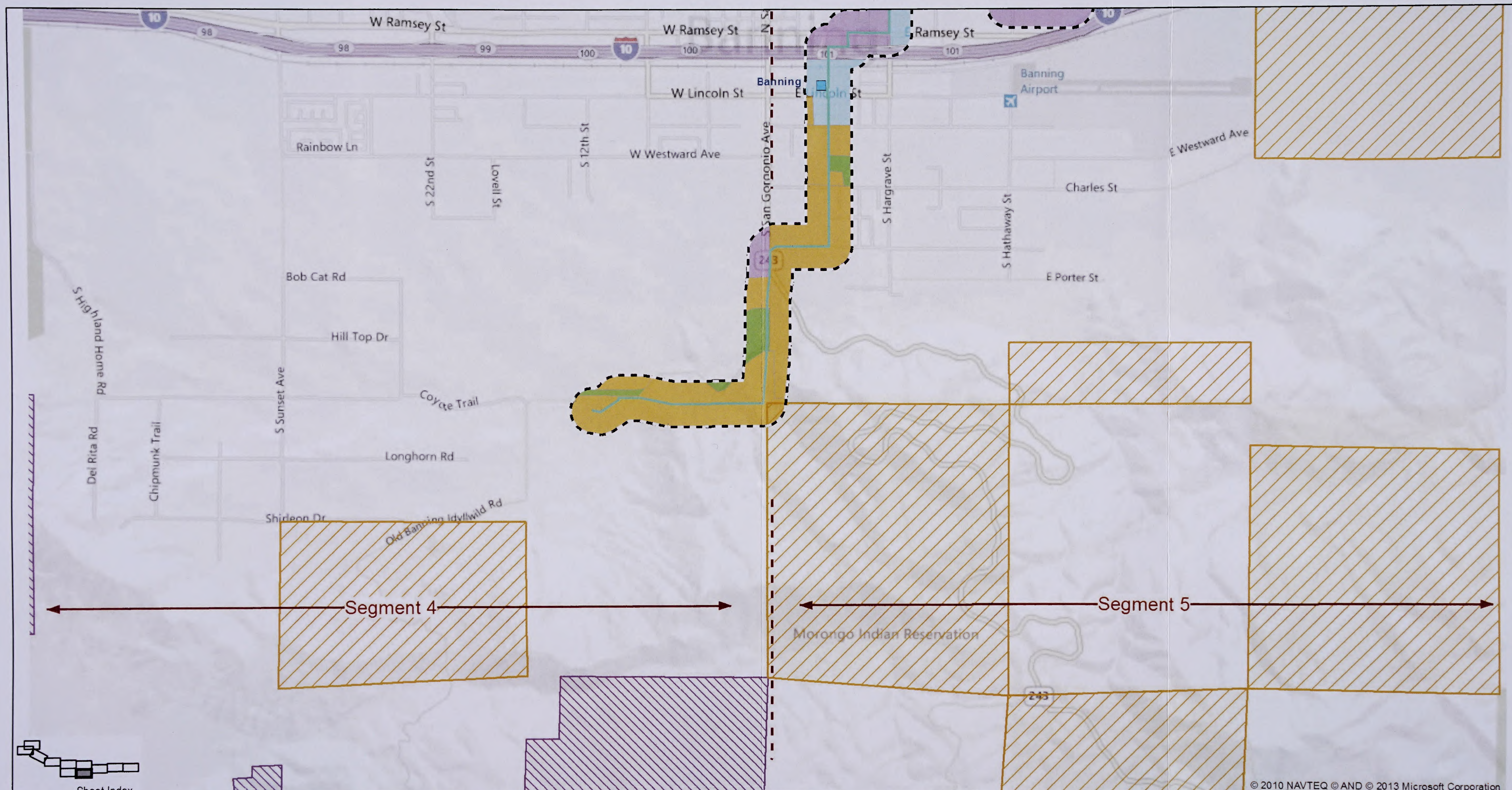
West of Devers Upgrade Project

Figure D.11-2g

Zoning, Segment 4 & 5



Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
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- Public Facilities
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- Specific Plan
- Water

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.11-2h

Zoning, Segment 4 & 5

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Alternative Transmission Line Right of Way
- Staging Yards
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Zoning Designations

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- Residential
- Specific Plan
- Water

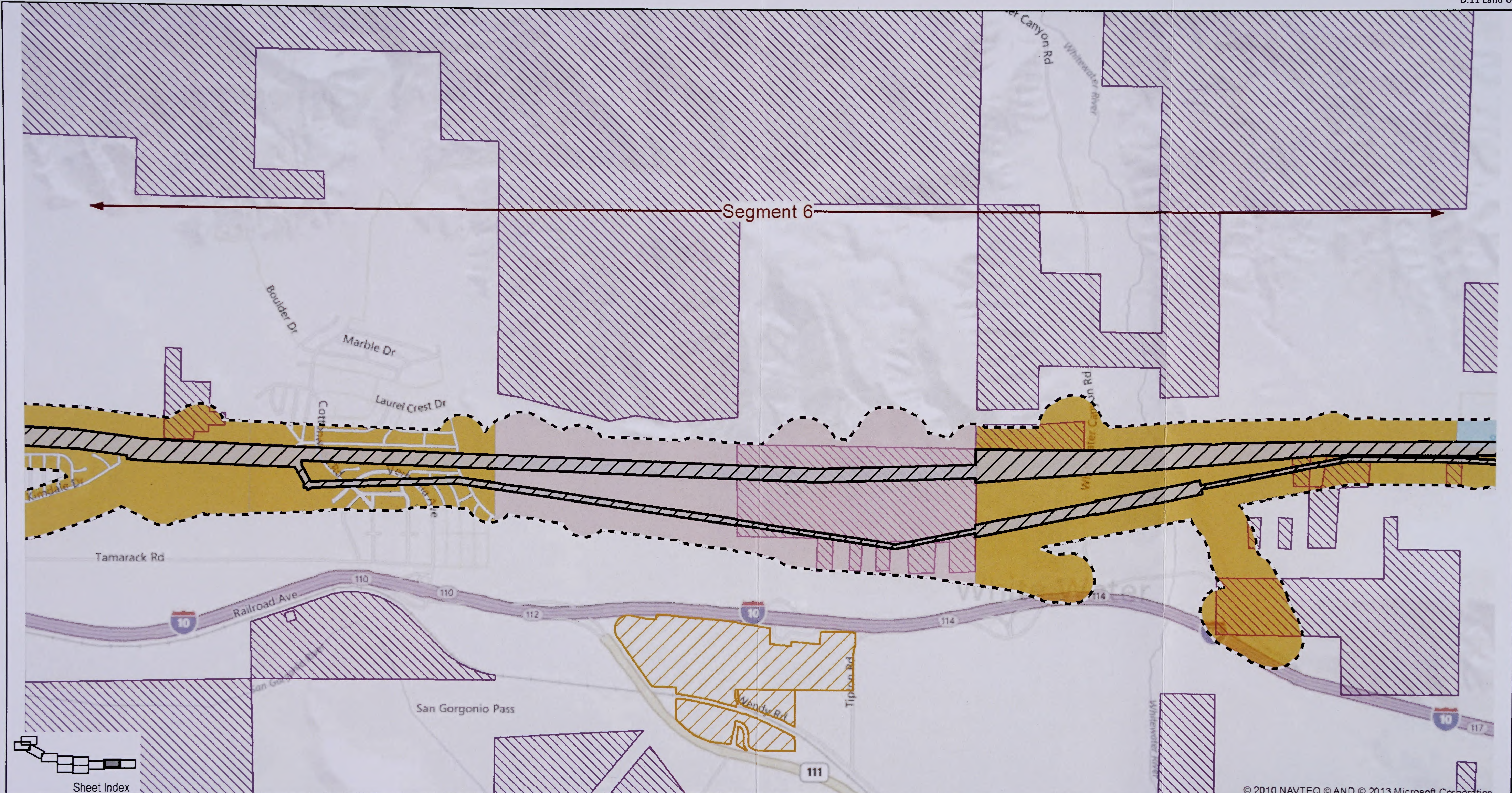
N

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.11-2i

Zoning, Segment 5



Source: SCE, 2013.

0 1000 2000
FEET

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
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- Relocated Distribution Line Routes
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- Zoning Study Area

Zoning Designations

- Agriculture
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- Controlled Development Area
- Industrial
- Open Space/Parks/Recreation
- Planned Community
- Public Facilities
- Residential
- Specific Plan
- Water

West of Devers Upgrade Project

Figure D.11-2j

Zoning, Segment 6

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
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- Open Space/Parks/Recreation
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- Specific Plan
- Water

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FEET

West of Devers Upgrade Project

Figure D.11-2k

Zoning, Segment 6

D.12 Mineral Resources

This section describes the affected environment for Mineral Resources and analyzes environmental impacts to these resources that are expected to result from the implementation of the project. The following discussions address existing environmental conditions in the affected area, identify and analyze environmental impacts, and recommend measures to reduce or avoid adverse impacts anticipated from project construction and operation. In addition, existing laws and regulations relevant to geologic and seismic hazards are described. Section D.12.1 presents the affected environment for Geology and Soils. Relevant regulations and standards are summarized in Section D.12.2. Sections D.12.3 through D.12.5 describe the impacts of the Proposed Project and the alternatives. Section D.12.6 presents the mitigation measures and mitigation monitoring requirements, and D.12.7 lists references cited.

D.12.1 Environmental Setting / Affected Environment

Baseline mineral resource information was collected from literature, GIS data, and online sources for the project and the surrounding area. The literature review was supplemented by a field reconnaissance of the proposed and alternative routes.

The study area was defined as the locations of Proposed Project components and the areas of immediately adjacent to the project components.

D.12.1.1 Regional Setting and Approach to Data Collection

Metallic and non-metallic mineral deposits occur within the study area. Metallic mineral deposits are restricted primarily to the areas of exposed bedrock in mountain areas. Gold, copper, and iron are the predominant metallic minerals mined in Riverside and San Bernardino Counties; however, no active metallic-mineral deposit mines are located in the project vicinity. Sand, clay, gravel, and rock products are important mineral resources in these counties and are still activity mined in the project vicinity. A review of active oil and gas field data from the Department of Conservation Division of Oil, Gas & Geothermal Resources (DOGGR) revealed that there are no active oil or gas fields within the study area (DOGGR, 2014).

Maps of the occurrence and location of mineral resources were reviewed for portions of San Bernardino and Riverside Counties (Matti, 1982; Matti, Cox and Iverson, 1983; Greene and Calzia, 1995; Calzia, Matti, Gantenbein, 1995). Map coverage was not complete. However, the proposed route does not appear to cross any areas of interest for mining other than those areas used for quarrying sand and gravel and areas used for landfill purposes. Additionally, a review of the U.S. Geological Service (USGS) Mineral Resource Data System (MRDS) was conducted which identified several mineral resource sites within 1,000 feet of the proposed route, all identified as sand and gravel operations (USGS, 2014). See the route segment discussions below for more information about the identified sand and gravel operations.

The California Geological Survey and State Mining and Geology Board are responsible for administration of a mineral lands inventory process termed classification designation. Areas are classified on the basis of geologic factors without regard to existing land use and land ownership. Inventoried areas are classified into four categories: MRZ-1, MRZ-2, MRZ-3, and MRZ-4. The zones are summarized as follows: MRZ-1 zones are areas where geologic information indicates no significant mineral deposits are present, MRZ-2 zones are areas that contain identified mineral resources, MRZ-3 zones are areas of undetermined mineral resource significance, and MRZ-4 zones are areas of unknown mineral resource potential. Of the four categories, areas classified as MRZ-2 are of the greatest importance as these areas are known to be underlain by demonstrated mineral resources or are located where geologic data indicate that significant measured or indicated resources are present. MRZ-2 areas are designated by the Mining and Geology Board as being "regionally significant."

The project area is located within the Palm Springs Production-Consumption Region and the San Bernardino Production-Consumption Region The mineral land classification maps indicate that within the immediate project area, portions of the San Gorgonio Pass area along the San Gorgonio and Whitewater Rivers and portions of the San Bernardino Valley area along the Santa Ana River are classified as MRZ-2. The project alignment crosses two designated MRZ-2 areas, one where the alignment crosses Whitewater River, and the second in eastern Banning where the alignment crosses the San Gorgonio River.

D.12.1.2 Environmental Setting by Segment

D.12.1.2.1 Segment 1: San Bernardino

No mineral resources other than potential sources of sand and gravel near the Santa Ana River wash are identified along this segment of the Proposed WODUP route.

D.12.1.2.2 Segment 2: Colton and Loma Linda

No mineral resources other than potential sources of sand and gravel near the Santa Ana River wash are identified along this segment of the Proposed WODUP route.

D.12.1.2.3 Segment 3: San Timoteo Canyon

No known mineral resources or MRZ-2 zones were identified for this segment.

D.12.1.2.4 Segment 4: Beaumont and Banning

No known mineral resources or MRZ-2 zones were identified for this segment.

D.12.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

Segment 5 crosses an identified MRZ-2 zone in the area where the alignment crosses the San Gorgonio River. One mineral resource site was identified by the MRDS database within the ROW of this segment, a sand and gravel quarry located along the San Gorgonio River just northeast of Banning. The quarry, Robertson's Ready Mix's Banning Rock Plant No. 66, is partially located within the above mentioned MRZ-2 zone and is roughly located along the proposed route between towers 5N47/5S47 and 5N49/5S49. (For reference, tower locations are shown on the figures in Appendix 2 (Detailed Project Maps.) Within the quarry boundaries, two sets of towers (5N48/5S48 and 5N49/5S49) for the new 220 kV transmission lines are being constructed and two Devers-Vista #1 towers (T157 and T159) are being removed. No other known mineral resources were identified in this segment.

D.12.1.2.6 Segment 6: Whitewater and Devers

Segment 6 crosses an identified MRZ-2 zone where the alignment crosses Whitewater River; however, no towers or project components are planned in this area. One mineral resource site was identified by the MRDS database within the ROW of this segment, the Whitewater quarry, a former sand and gravel quarry located on the west side of the Whitewater River immediately south of where the alignment crosses the river. This quarry is owned by Metropolitan Water District and is no longer active. No other known mineral resources were identified in this segment.

D.12.1.3 Environmental Setting for Connected Actions

Desert Center Area. The Desert Center area includes mostly BLM lands with some private lands under the jurisdiction of Riverside County. Two known connected actions to the Proposed Project are both in the Desert Center area: the Palen Solar Power Plant and the Desert Harvest Solar Project. The Palen project site is approximately 0.25 miles north of I-10 and 10 miles east of Desert Center. The analysis for mineral resources found that there are no active mining claims or mineral leases within the site; however, the area is classified as prospectively valuable for geothermal resources, which means that it has moderate potential for the occurrence of geothermal resources and prospecting is still a viable potential use (BLM, 2013).

According to the Final EIS for the Desert Harvest Solar Project, the solar facility site is within the MRZ-4 designation, as classified by the State Geologist in accordance with the State Mining and Geology Board's priority list. This designation indicates areas where there is not enough information available to determine the presence or absence of mineral deposits (BLM, 2012). The other solar PV projects in the area are assumed to have a similar lack of information.

The USGS's MRDS identified several mineral resource sites in the Desert Center area. The majority of the mineral resources shown in this large geographic area are prospects, which are areas that are not under active mining operations. The mining operations shown on the MRDS include present and past producers of metallic (copper, silver, gold, etc.) and non-metallic mineral resources (stone, sand, gravel, etc.) (USGS, 2014).

Blythe Area. The Blythe area is in eastern Riverside County and includes privately owned developed, undeveloped, and agricultural lands in eastern Riverside County, as well as BLM administered lands. The Blythe Mesa Solar Project is proposed in this area. However, as discussed in Draft EIR/EA for this project, mineral resources are not present or not affected by the Blythe Mesa Solar Project or its alternative, and therefore not discussed in detail in the Draft EIR/EA (BLM and Riverside County, 2014).

The USGS's MRDS identifies several mineral resource sites in the Blythe Area. The majority of the mineral resources shown include past producers of metallic (gold, silver, uranium etc.) and non-metallic mineral resources (stone, sand, gravel, etc.) (USGS, 2014). Depending on their location, the solar PV projects in the area could be sited at or near a mineral extraction site.

D.12.2 Applicable Regulations, Plans, and Standards

Mineral resources are governed primarily by state and local jurisdictions. When addressed locally, mineral resources may be discussed in land use, conservation, and/or open space elements of a city or county general plan. Relevant, and potentially relevant, statutes, regulations, and policies are discussed below.

D.12.2.1 Federal

Mining and Mineral Policy Act of 1970. The Mining and Mineral Policy Act of 1970 is intended to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources. This statute established modern Federal policy regarding mineral resources in the United States, and it encompasses both hard rock mining and oil and gas production and established modern Federal policy regarding mineral resources in the United States. The Act applies to all minerals, including sand and gravel, geothermal, coal, and oil and gas that are subject to Department of Interior jurisdiction, including Bureau of Land Management (BLM) lands.

D.12.2.2 State

California Surface Mining and Reclamation Act. SMARA was enacted in 1975 and mandates MRZ classifications by the State Geologist in order to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible land uses that would preclude mineral extraction. SMARA also allows the State Mining and Geology Board to designate lands containing mineral deposits of regional or statewide significance after receiving classification information from the State Geologist. The law provides for significant mineral resources to be recognized and considered before land use decisions are made that compromise the availability of these resources.

D.12.2.3 Local

Both the San Bernardino and Riverside County General Plans identify goals and policies related to mineral resources and their extraction. Relevant sections of these plans are presented below.

San Bernardino County (SBC) General Plan

Land Use Element (SBC2007)

GOAL LU 7. The distribution of land uses will be consistent with the maintenance of environmental quality, conservation of natural resources, and the preservation of open spaces.

Policies LU 7.1 Ensure that land use developments within the state-delineated Mineral Resource Zones (MRZs) are in accordance with the adopted mineral resources management policies of the County.

Conservation Element (SBC, 2011)

GOAL CO 7. The County will protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment.

Policies CO 7.1 In areas containing valuable mineral resources, establish and implement conditions, criteria, and standards that are designed to protect the access to, and economic use of, these resources, provided that the mineral extraction does not result in significant adverse environmental effects and that open space uses have been considered for the area once mining operations cease.

CO 7.2 Implement the state Mineral Resource Zone (MRZ) designations to establish a system that identifies mineral potential and economically viable reserves.

CO 7.3 Mining operators/owners will provide buffers between mineral resources (including access routes) and abutting incompatible land uses. New mineral and non-mineral development in these zones will be designed and reviewed according to the compatibility criteria specified in this policy.

CO 7.4 Review land development and mining proposals near potentially incompatible land uses with the goal of achieving land use compatibility between potentially incompatible uses.

CO 7.5 Protect existing mining access routes by giving them priority over proposed alterations to the land, or by accommodating the mining operations with as good or better alternate access, provided the alternate access does not adversely impact proposed open space areas or trail alignment.

Riverside County (RC) General Plan

Multipurpose Open Space Element (RC, 2013)

Policies

OS 14.1 Require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and County Development Code provisions.

OS 14.2 Restrict incompatible land uses within the impact area of existing or potential surface mining areas.

OS 14.3 Restrict land uses incompatible with mineral resource recovery within areas designated Open Space-Mineral Resources. (AI 11)

OS 14.5 Require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.

Land Use Element (RC, 2014)

Policies

The following policies apply to properties designated as Open Space-Mineral Resources on the area plan land use maps.

LU 21.1 Require that surface mining activities and lands containing mineral deposits of statewide or of regional significance comply with Riverside County Ordinances and the SMARA.

LU 21.2 Protect lands designated as Open Space-Mineral Resource from encroachment of incompatible land uses through buffer zones or visual screening. (AI 3)

LU 21.3 Protect road access to mining activities and prevent or mitigate traffic conflicts with surrounding properties.

City General Plans

The cities of Beaumont, Calimesa, Grand Terrace, Loma Linda, and San Bernardino do not identify policies pertaining to mineral resources, and no mineral resource areas are identified within these cities.

City of Banning

Energy and Mineral Resources Element (Banning, 2006), Policy 5 Assure a balance between the availability of mineral resources and the compatibility of land uses in areas where mineral resources are mined.

City of Colton

Open Space and Conservation Element (Colton, 1987), Principle 4 Protect significant mineral deposit sites from irreplaceable resource extraction until a regional shortage or impending need can be demonstrated when permit approvals guarantee restoration of such areas to their natural state.

City of Redlands

Open Space and Conservation Element (Redlands, 1998), Guiding Policies: Construction Aggregates

7.42a Conserve sufficient aggregate resources to allow conversion of two 50-year supplies (approximately 2,400 acres) of aggregate reserves to meet the Planning Area's contribution to future regional needs.

7.42b Manage aggregate resources to ensure that extraction results in the fewest environmental impacts. Require preparation and assured implementation of a reclamation plan for aggregate extraction sites as a condition of approval of mining.

D.12.3 Environmental Impacts of the Proposed Project

D.12.3.1 Approach to Impact Assessment

Potential impacts to mineral resources were considered in this analysis. The California Geological Survey (CGS) provides information about California's non-fuel mineral resources. The CGS's Mineral Resources Project classifies lands throughout the State that contain regionally significant mineral resources as mandated by SMARA. Development generally results in a demand for minerals, especially construction aggregate. The presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate are classified as MRZs.

D.12.3.1.1 Applicant Proposed Measures

Table D.12-1 presents the Applicant Proposed Measures (APMs) that SCE has committed to implementing during construction and operation of the Proposed Project. If revision or expansion of any APM is found to be required based on the analysis in this EIS, those changes are explained in Section D.12.3.3 (Impact Analysis).

Table D.12-1. Applicant Proposed Measures for Minerals

APM	Description
APM MIN-1	To minimize interference with mining operations at Robertson's Ready Mix Banning Rock Plant #66, SCE will coordinate with the owner/operator to avoid critical mining periods and high volume earthmoving days and will document said coordination.

D.12.3.2 Impact Criteria

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). Using the following criteria for the purposes of analysis, the project or an alternative would impact mineral resources if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

D.12.3.3 Impacts and Mitigation Measures

This section presents discussion of impacts related to mineral resources and mitigation measures for the Proposed Project. Resource conditions were evaluated with respect to the impacts the project may have on local mineral resources.

Impact MR-1: Construction activities would render known mineral resources inaccessible.

Segment 5 crosses an active sand and gravel quarry operated by Robertson's Ready Mix at the north-eastern edge of the City of Banning. The segment crosses the quarry roughly between towers 5N47/5S47 and 5N49/5S49 (see Appendix 2 for tower locations). The Proposed Project would entail the removal of existing poles and conductors along the two existing alignments through the quarry and construction of new TSPs and LSTs in a single ROW shifted slightly to the northeast of the Devers-Vista #1 ROW. While the project would result in a shift in the location of the transmission corridor at Banning Rock Plant No. 66, the total number of transmission line corridors through the quarry would be reduced, potentially opening up new mineral resource quarrying locations. After construction of the project, conditions would be very similar to the existing condition in the quarry would therefore not reduce accessibility to the sand and gravel resources. However, construction operations for the project could potentially interfere with daily ongoing mining operations at the quarry. Construction impacts to known mineral resources would be temporary and would not result in the loss of availability of those resources.

Mitigation Measure for Impact MR-1 (Construction activities would render known mineral resources inaccessible)

As described in Section D.12.3.1.1, APM MIN-1 proposed by SCE is to minimize interference with mining operations. However, APM MIN-1 is not adequately detailed. Therefore, APM MIN-1 is superseded by Mitigation Measure MR-1a (Coordinate with quarry operations), which would reduce the potential to interfere with quarry operations and render mineral resources temporarily inaccessible.

MR-1a **Coordinate with quarry operations.** Prior to construction within the Banning Rock Plant No. 66, SCE would consult with the plant owners and plant operations and management personnel. The consultation will include identification of locations of active mining and coordination of construction activities in and through those areas and to determine the best way to proceed with project construction, all with the goal of minimizing any disruption to plant operations. A plan to avoid or minimize interference with mining operations shall be prepared by SCE documenting how coordination with the quarry operators is expected to occur. Prior to construction in the quarry area, SCE shall provide CPUC and BLM a copy of this plan.

D.12.3.4 Impacts of Connected Actions

Impact MR-1: Construction activities would render known mineral resources inaccessible

As discussed in the environmental setting (Section D.2.1.3), there are no known designations or active mineral operations in the project areas of the known connected solar projects. However, the USGS's MRDS does show present and past mineral producers in the Desert Center and Blythe areas. Therefore, construction and operation activities associated with the connected solar PV projects could interfere with active mining activities. This would be similar to the Proposed Project, where interference would be temporary and would not result in the loss of availability of those resources. If this impact were to occur, Mitigation Measure MR-1a (Coordinate with quarry operations) would reduce the potential to interfere with quarry (or mining) operations.

D.12.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.12.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Mineral resources within the ROW are described by segment in Section D.12.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.12.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

One impact related to mineral resources was identified for the Proposed Project. This impact also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.12.3.3, except where otherwise noted.

Impact MR-1: Construction activities would render known mineral resources inaccessible

None of the relocated towers would be located in an area containing active mining operations. Subsequent to construction, the continuing operational presence of the relocated towers would not render known mineral resources inaccessible.

D.12.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

One impact related to mineral resources was identified for the Proposed Project. This impact also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.12.3.3, except where otherwise noted.

Impact MR-1: Construction activities would render known mineral resources inaccessible

The underground portion of the subtransmission line in this alternative would not be located in an area containing active mining operations. Also, the continuing operational presence of the underground line would not render known mineral resources inaccessible, as the line would be located within the existing road.

D.12.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

One impact related to mineral resources was identified for the Proposed Project. This impact also would apply to the Phased Build Alternative. The full text of the mitigation measure referenced in this section is presented in Section D.12.3.3.

Impact MR-1: Construction activities would render known mineral resources inaccessible

Construction of the Phased Build Alternative would occur in the same ROW as would the Proposed Project. This includes construction in active mining operations at the western edge of Segment 5, where the alignment crosses an active sand and gravel quarry operated by Robertson's Ready Mix at the northeastern edge of the City of Banning. Construction of this alternative could potentially interfere with daily ongoing mining operations at the quarry. This interference would be similar to that associated with the Proposed Project, but less severe due to the retention of the existing double-circuit towers. Construction impacts to known mineral resources would be temporary and would not result in the loss of availability of those resources. Mitigation Measure MR-1a (Coordinate with quarry operations) would reduce the potential to interfere with quarry operations and render mineral resources temporarily inaccessible.

D.12.5 Environmental Impacts of No Action Alternative

D.12.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

No Action Alternative Transmission Lines and Beaumont Substation. During development of the Devers-Valley 500 kV line and the El Casco 115 kV line, which cover the area for the No Action Alternative, no mineral resources were identified that were actively being mined. Because of the relatively small footprint of individual transmission poles or towers, construction of transmission lines would have minimal effect on mineral resources and their availability in the future. In the analysis of the Devers to Valley transmission line, the DPV2 EIR/EIS identified 5 mineral resource sites near the alignment. All were greater than 100 feet from the ROW.

D.12.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. The USGS Mineral Resources Data System shows the presence of mineral resources throughout the lands surrounding the alternative route. Typical mineral resource deposits in the region include aggregate such as sand and gravel.

There are no active mining sites within the existing ROW, but several active mining operations are located near the corridor. Nearby active mining operations were identified at four locations, including: 1 mile south of the ROW near MP 13.5, 0.2 miles north of the ROW near MP 19.5, 1.5 miles southwest of the ROW near MP 21.5, and 0.7 miles south of Serrano Substation. Because the new 500 kV circuit would be constructed mostly within or adjacent to the existing ROW, it is not anticipated that any of the nearby mining operations would be interrupted during either construction or operation of this alternative. Because this alternative would be located within an existing transmission corridor, and because the permanent footprint of the new transmission structures would be small and dispersed along the length of the route, construction and operation of this alternative is unlikely to preclude the long-term availability of mineral resources.

D.12.6 Mitigation Monitoring, Compliance, and Reporting

Table D.12-2 presents the mitigation monitoring, compliance, and reporting actions for minerals.

Table D.12-2. Mitigation Monitoring Program – Mineral Resources

MITIGATION MEASURE	**MR-1a: Coordinate with quarry operations.** Prior to construction within the Banning Rock Plant No. 66, SCE would consult with the plant owners and plant operations and management personnel. The consultation will include identification of locations of active mining and coordination of construction activities in and through those areas and to determine the best way to proceed with project construction, all with the goal of minimizing any disruption to plant operations. A plan to avoid or minimize interference with mining operations shall be prepared by SCE documenting how coordination with the quarry operators is expected to occur. Prior to construction in the quarry area, SCE shall provide CPUC and BLM a copy of this plan.
Location	Banning Rock Plant No. 66 quarry.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits plan documenting coordination with the quarry.
Effectiveness Criteria	Quarry operations are not unduly disrupted by transmission line construction.
Responsible Agency	CPUC/BLM
Timing	Prior to construction in quarry area.

D.12.7 References

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D.13 Noise

This section describes the affected environment for Noise in Section D.13.1 and presents the relevant regulations and standards in Section D.13.2. Sections D.13.3 through D.13.5 describe the impacts of the Proposed Project and alternatives. Section D.13.6 presents the mitigation measures and mitigation monitoring requirements, and D.13.7 lists references cited.

D.13.1 Environmental Setting / Affected Environment

D.13.1.1 Regional Setting and Approach to Data Collection

The environmental setting for noise, including measurements of local noise levels, is drawn from a review of local, State, and federal regulations, policies, and ordinances, and information gathered by the applicant and from other sources, including:

- U.S. Environmental Protection Agency (U.S. EPA),
- California Department of Transportation (Caltrans),
- Plans, policies, and ordinances adopted by local jurisdictions, and
- Other information found in the Proponent's Environmental Assessment (PEA).

Local land uses and the sensitivity of those uses to potential changes in noise levels are discussed, and existing laws and regulations relevant to noise control are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid project impacts.

D.13.1.2 Environmental Setting by Segment

Community Noise Fundamentals. To describe environmental noise and to assess project impacts on areas that are sensitive to community noise, a measurement scale that simulates human perception is used. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels (dB) are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.

Community noise levels can be highly variable from day to day as well as between day and night. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The L25 is the noise level exceeded 25 percent of the time. The L50 is the median noise level that is exceeded fifty percent of the time during a measurement interval, and the L90 is the noise level that is exceeded 90 percent of the time (the 10th percentile).

The Ldn, or day-night average sound level, is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m. Community Noise Equivalent Level (CNEL) is another metric that is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. To easily estimate the day-night level caused by any noise source emitting steadily and continuously over 24-hours, the Ldn is 6.4 dBA higher than the source's Leq. For example, if the expected continuous noise level from equipment is 50.0 dBA Leq for every hour, the day-night noise level would be 56.4 dBA Ldn.

Community noise levels usually are closely related to the intensity of human activity. Noise levels generally are considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable (U.S. EPA, 1974).

Table D.13-1 shows typical sound levels of various environmental noise sources.

Table D.13-1. Typical Sound Levels Measured in the Environment and Industry

Noise Source and Distance	A-Weighted Sound Level (dBA)	Subjective Impression
Civil defense siren (100 ft)	130	Pain threshold
Jet takeoff (200 ft)	120	
Rock music concert (50 ft)	110	
Pile driver (50 ft)	100	Very loud
Ambulance siren (100 ft)	90	
Diesel locomotive (25 ft)	85	Loud
Pneumatic drill (50 ft)	80	
Freeway (100 ft)	70	Moderately loud
Vacuum cleaner (10 ft)	60	
Light traffic (100 ft)	50	
Large transformer (200 ft)	40	Quiet
Soft whisper (5 ft)	30	Threshold of hearing

Existing Noise Levels. A wide range of noise sources occurs near the Proposed Project. The existing transmission lines, which create corona noise that sounds like crackling and humming, are the most notable noise source in the immediate vicinity of the corridor. The noise from corona discharge and similar electrical phenomena associated with high-voltage power transmission is heard near an energized line as a crackling or hissing sound. This noise increases with the load carried by the line, irregularities on the conductor surface caused either by age or moisture, and wet ambient meteorological conditions, such as when high humidity, fog, or rain occur. At the ground level, directly underneath a single 220 kV circuit, the typical audible noise level with wet conductors is about 40 dBA (SCE, 2013). Surrounding land uses contribute many other noise sources, depending on the locations, described below.

In unincorporated areas and communities, predominantly open or rural land leads to existing noise levels being generally low. Noise levels in urban and suburban areas are mainly influenced by roadway and highway traffic, railroads, or aircraft. Baseline noise levels are typically around 30 dBA for quiet rural lands during the nighttime, when located away from traffic, whereas commercial and urban areas typically have noise levels between 60 and 70 dBA or higher (Caltrans, 2009). Noise levels are the highest (over 80 dBA) adjacent to major transportation facilities such as the interstate highways I-10 and I-15 or near industrial land uses. Region-serving airports, landing strips, and a helipad, which can create substantial noise, are also near the project route as described for each segment in Sections D.13.1.2.1 through D.13.1.2.6.

Table D.13-2 summarizes the baseline ambient noise levels along the project route. The locations of these measurement locations are shown in Figure D.13-1.

Table D.13-2. Existing Ambient Noise Levels

Location	Jurisdiction	SCE Monitor	Duration	Leq (dBA)	Ldn (dBA)
Segment 1					
Nelson Street	Loma Linda	LT-2	24 hr	40.7–55.8	54.3
Ragsdale Road	Loma Linda	ST-5	20 min	44.1	—
Juniper Street	Loma Linda	ST-6	20 min	48.1	—
Research Drive	Redlands	ST-7	20 min	63.1	—
Segment 2					
Prado Lane	Colton	LT-1	24 hr	25.2–52.5	46.7
Mt Vernon Ave	Grand Terrace	ST-1	20 min	57.0	—
Vista Grande Way	Grand Terrace	ST-2	20 min	54.0	—
Skyview Drive	Colton	ST-3	20 min	44.4	—
Reche Canyon Road	San Bernardino County	ST-4	20 min	50.5	—
Segment 3					
San Timoteo Canyon Rd, Fisherman's Retreat	Redlands	ST-8	20 min	51.8	—
Segment 4					
O'Grady Court, near El Casco	Beaumont	LT-3	24 hr	37.9–58.3	52.2
Venturi Ave	Beaumont	ST-9	20 min	39.2	—
Trevino Park	Beaumont	ST-10	20 min	47.6	—
Desert Lawn Drive	Beaumont	ST-11	20 min	56.5	—
Cedar View Drive, near Beaumont Ave	Beaumont	LT-4	24 hr	43.8–51.8	53.4
Cedar Hollow Road	Beaumont	ST-12	20 min	46.1	—
Hillside Drive	Banning	ST-13	20 min	46.2	—
Segment 5					
N. Murray Street	Banning	ST-14	20 min	47.6	—
Dailey Road	Morongo	ST-15	20 min	53.7	—
Malki Road, Community Center	Morongo	ST-16	20 min	60.5	—
Segment 6					
Kalsman Drive, Whitewater	Riverside County	ST-17	20 min	47.2	—
San Pierre Road, Whitewater	Riverside County	LT-5	24 hr	45.3–63.8	60.7

Leq: Equivalent noise level of all of the time-varying sound energy during the measurement period, or one hour for long-term measurements.
Ldn: day-night level calculated from 24 hours of equivalent sound level data with a 10 decibel penalty between 10:00 p.m. and 7:00 a.m.
Source: SCE, 2013 (PEA Table 4.12-3).

Noise-Sensitive Areas. Noise-sensitive receptors are areas where excessive noise may conflict with the intended use, examples include residential areas, schools, hospitals, day care centers, campgrounds, and certain other outdoor recreation areas. Noise-sensitive areas encountered near the Proposed Project and associated work areas include residences, schools, community parks, and other recreational uses. Land use designations and zoning appear on maps in EIS Section D.11, Land Use and BLM Realty; and recreation areas appear in EIS Section D.15, Recreation (see Figure D.15-1).

D.13.1.2.1 Segment 1: San Bernardino

Ambient Noise Levels. Ambient noise levels generally depend on the proximity of I-10 and other busy roads in the City of Redlands or the City of Loma Linda. Near I-10 and busy city streets, localized areas of noise levels over 70 Ldn can occur. The densely developed surroundings of Loma Linda and the existing

220 kV corridor near San Bernardino Substation each contribute to ambient noise levels in this portion of the route. San Bernardino International Airport, which causes elevated noise levels near the northernmost portion of the Proposed Project corridor, is situated 1 mile north of the San Bernardino Substation. Elevated noise levels may be caused at the Mountainview Power Plant site, adjacent to the San Bernardino Substation; however, the power plant was approved (CEC, 2001) on the basis that it would cause noise levels under 59 dBA L90 during daytime hours (10 a.m. to 4 p.m.) and 52 dBA L90 during nighttime hours (11 p.m. to 4 a.m.) at the closest sensitive receptor. SCE's four existing 220 kV transmission lines within Segment 1 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. Medium to high-density housing surrounds this part of the 220 kV corridor in the City of Loma Linda primarily near Beaumont and Lawton Avenues and near mission Road, and recreational open space and parks (Hulda Crooks Park) are found under the existing transmission line.

D.13.1.2.2 Segment 2: Colton and Loma Linda

Ambient Noise Levels. Ambient noise levels generally depend on the proximity of I-215 and other busy roads in the Cities of Colton, Grand Terrace, and Loma Linda, and levels under 50 Ldn occur in the mountainous terrain at the edge of the developed areas. Near I-215 and busy city streets, localized areas of noise levels over 70 Ldn can occur. The urban development within these cities results in elevated ambient noise levels where Segment 2 passes through developed areas of the route. The Loma Linda University Medical Center Heliport is 1.0 mile north of the right-of-way, between the Vista and San Bernardino Junction. SCE's existing 220 kV transmission lines in Segment 2 can cause 41 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. Medium to high-density housing surrounds this part of the 220 kV corridor in the Cities of Colton and Grand Terrace, and lower-density housing occurs in unincorporated San Bernardino County, near Reche Canyon Road. No sensitive uses are in Loma Linda along the Segment 2 portion of the corridor between Vista Substation and San Bernardino Junction. In the City of Colton, an elementary school is located within 700 feet northeast of the corridor.

D.13.1.2.3 Segment 3: San Timoteo Canyon

Ambient Noise Levels. Ambient noise levels are generally under 50 Ldn except in the vicinity of the Union Pacific Railroad lines and traffic along San Timoteo Canyon Road. SCE's four existing 220 kV transmission lines within Segment 3 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. The Segment 3 portion of the corridor occurs in the City of Redlands within the San Timoteo Canyon and in unincorporated Riverside County, where some low-density ranches occur. Rural residences are also scattered within about 500 feet of the corridor as it crosses the hills on the western side of the San Timoteo Canyon. The corridor also crosses undeveloped San Timoteo Canyon State Park with open space and trails.

D.13.1.2.4 Segment 4: Beaumont and Banning

Ambient Noise Levels. Ambient noise levels are generally between 50 and 60 Ldn due to urbanized uses adjacent to the Segment 4 portion of the corridor. Along the southern edge of the City of Calimesa, ambient noise levels are generally between 50 and 70 Ldn depending on the proximity the Union Pacific Railroad lines along Oak Valley Parkway and I-10. Near where the corridor crosses I-10 or the railroad, localized areas of noise levels over 70 Ldn can occur. Otherwise, localized areas of noise levels would be up to 60 Ldn where busy roads occur in the corridor. The Banning Airport, which may cause elevated noise levels near the corridor, is about 1 mile south of the Proposed Project, south of I-10 on the eastern side of Banning. SCE's four existing 220 kV transmission lines within Segment 4 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. The Segment 4 portion of the corridor that occurs in the City of Calimesa is bordered by medium- to high-density residential uses. Medium- to high-density residential uses also occur adjacent to the corridor through the Cities of Beaumont and Banning. Other noise-sensitive land uses that surround the corridor include Beaumont High School and Junior High School, Nobel Creek Park, and other recreational activity areas.

D.13.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

Ambient Noise Levels. Localized areas of noise levels over 70 Ldn can occur due to commercial uses, industrial uses, and busy roads near the corridor, especially near the Morongo tribal lands, where I-10 is adjacent to the corridor. SCE's existing 220 kV transmission lines in Segment 5 cause 43 Ldn due to audible corona noise (SCE, 2014a).

Noise-Sensitive Receptors. Single-family homes with large lot residential classifications are adjacent to the edges of the transmission line corridor through the Morongo portion of unincorporated Riverside County.

D.13.1.2.6 Segment 6: Whitewater and Devers

Ambient Noise Levels. Noise sources related to industrial uses (including wind generating facilities), transportation facilities, commercial land uses, and dispersed residential uses generally create levels between 50 and 70 Ldn, depending on the proximity to noise sources on industrial land or the proximity of I-10 or Highway 62. SCE's four existing 220 kV transmission lines within Segment 6 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. Single-family homes with large lot residential classifications are adjacent to and within the transmission line corridor through this portion of unincorporated Riverside County. Low-density homes occur adjacent to the edge of the corridor near Rushmore Avenue, near the boundary with Morongo tribal lands. The existing transmission structures are in the midst of residential uses within 100 feet of some homes in the Haugen-Lehmann area that lies east of Cottonwood Road and west of Desert View Avenue. Homes are also adjacent to the corridor as part of the Whitewater community, west of State Route 62 near Painted Hills Road. In Segment 6, the existing transmission lines cross the Pacific Crest Trail (PCT) that provides recreational access to the wilderness and other areas where quiet is an important feature.

D.13.1.3 Environmental Setting for Connected Actions

Common to all Areas. Community noise levels usually are closely related to the intensity of human activity. Because ambient noise conditions are localized, levels depend on the type and frequency of noise generating activities. In remote wilderness areas, the Ldn (equivalent level over a given time period) noise levels can be below 35 dBA. In small towns and lightly used residential areas, the Ldn is more likely around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas. The presence of a major highway, such as I-10, would contribute to the noise environment in its vicinity.

Desert Center Area. The Desert Center area is primarily BLM-administered lands, with some unincorporated Riverside County land interspersed. Population occurs here in the unincorporated town of Desert Center, the Lake Tamarisk Park development, and Eagle Mountain Village. Otherwise, the land is vacant. The nearest incorporated population centers are well outside the area, and include Blythe, Coachella, and Indio in Riverside County, and Twentynine Palms in San Bernardino County.

As with other desert areas, the Desert Center area likely has Leq noise levels below 35 dBA. In rural residential areas the Leq is typically around 50 or 60 dBA. For example, at rural residences nearest the Palen Solar Power Project, ambient noise was measured at 43 dBA Leq during daylight hours and 34 dBA Leq during evening hours.

Blythe Area. The Blythe area includes BLM-administered lands and privately owned developed, undeveloped, and agricultural lands in eastern Riverside County. Similar to other remote areas, the Blythe area likely experiences noise levels below 35 dBA Leq. In rural residential areas, including agricultural areas, the level is more likely to be around 50 or 60 dBA Leq. Periodic levels around 75 dBA are expected during daytime hours proximate to busier roadways and human activities in the City of Blythe.

D.13.2 Applicable Regulations, Plans, and Standards

D.13.2.1 Federal

Regulating environmental noise is generally the responsibility of local government. The U.S. EPA has published guidelines on recommended maximum noise levels to protect public health and welfare (U.S. EPA, 1974). With regard to noise exposure and workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise or equipment noise (29 CFR Section 1910.95, Code of Federal Regulations), and these safeguards help to avoid excessive noise at construction sites.

There are no federal noise standards that directly regulate environmental noise caused by the types of sources affiliated with the Proposed Project. Federally sponsored highway projects, aviation, and transit are subject to noise analysis procedures and abatement requirements. Table D.13-3 provides a summary of the noise levels recommended by the U.S. EPA for protecting public health and welfare with an adequate margin of safety.

Table D.13-3. Protective Noise Levels Recommended by U.S. EPA

Effect	Maximum Level	Exterior or Interior Area
Hearing loss	70 dB Leq(24)	All areas.
Outdoor activity interference and annoyance	55 dB Ldn	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	55 dB Leq (24)	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	45 dB Ldn	Indoor residential areas.
	45 dB Leq(24)	Other indoor areas with human activities such as schools, etc.

Leq(24) is the sound energy averaged over a 24-hour period.
Ldn is the Leq with a 10 dB nighttime penalty.
Source: U.S. EPA, 1974 (Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Table 1).

D.13.2.2 State

The State of California maintains recommendations for local jurisdictions in the General Plan Guidelines published by the Governor's Office of Planning and Research (OPR, 2003). Local governments have discretion to adopt the state-wide recommendations as necessary for the setting; the following information summarizes the local requirements.

D.13.2.3 Local

The California Public Utilities Commission (CPUC) regulates and authorizes the construction of investor-owned utility facilities and has exclusive jurisdiction over the siting and design of the Proposed Project. Although these projects are exempt from local land use and zoning regulations and permitting, CPUC takes into consideration local plans and policies.

Each local government aims to protect its residents from intrusive noise. Many communities specifically restrict the creation of disturbing noises at night, and daytime construction activities are usually exempt from noise limits.

City of Redlands

City of Redlands, General Plan. Exterior noise levels below 60 CNEL are generally considered to be acceptable and compatible for residential areas. The City of Redlands General Plan (1995) includes:

- **Noise Element Policy 9.0c.** Support measures to reduce noise emissions by motor vehicles, aircraft, and trains.
- **Noise Element Policy 9.0w.** Limit hours for all construction or demolition work where site-related noise is audible beyond the site boundary.
- **Noise Element Policy 9.0y.** Minimize impacts of loud trucks by requiring that maximum noise levels due to single events be controlled to 50 dB in bedrooms and 55 dB in other habitable spaces.

City of Redlands, Municipal Code. The Noise Ordinance for the City of Redlands generally prohibits any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to a reasonable person of normal sensitivity (Section 8.06.030, General Noise Regulations). The noise ordinance also prohibits daytime noise over 60 dBA (between 7:00 a.m. and 10:00 p.m.) and nighttime noise over 50 dBA at residential uses if it occurs over a cumulative period of more than 30 minutes in any hour. These limits are reduced to 55 dBA in the daytime and 45 dBA in the nighttime for any source that contains a steady tone or hum (Section 8.06.070, Exterior Noise Limits).

The Redlands Noise Ordinance also prohibits noise from construction work between weekday hours of 6:00 p.m. and 7:00 a.m., including Saturdays, or at any time on Sundays or holidays, if it creates a noise disturbance across a residential or commercial real property line. Emergency work by public utilities or governmental entities is exempt from this prohibition. Vibration that is perceptible on private property or 150 feet from the source is also prohibited. In all cases, engines powering construction equipment or machinery must be equipped with exhaust and air intake silencers in proper working order (Section 8.06.090, Noise Disturbances Prohibited).

City of Loma Linda

City of Loma Linda, General Plan. The City of Loma Linda General Plan (2009) identifies the following policies:

- **Noise Element Policy A.** Achieve and maintain exterior noise levels appropriate to planned land uses throughout Loma Linda as indicted below:
  - Residential Single-Family. 65 dBA within rear yards. Multifamily: 65 dBA within private yard or enclosed balcony spaces. Single/Multifamily, indoor noise level: 45 dBA with windows closed.
  - Schools Classrooms. 65 dBA exterior noise environment at the classroom location. Play and sports areas: 70 dBA.
  - Libraries, Churches, Hospitals, Nursing Homes. 60 dBA exterior noise environment at the building location.
  - Commercial/Industrial. 70 dBA exterior noise environment at the building location, unless additional interior mitigation is provided.
- **Noise Element Policy B.** Maintain a pattern of land uses that separates noise-sensitive land uses (e.g., residential, churches, schools, hospitals) from major noise sources to the extent possible, and guide noise tolerant land uses into the noisier portions of the Planning Area.
- **Noise Element Policy C.** Require new developments to limit noise impacts on adjacent properties through acoustical site planning, which may include, but is not limited to the following actions:
  - Increased setbacks from noise sources from adjacent buildings.
  - Screen and control noise sources, such as parking, and loading facilities, outdoor activities and mechanical equipment.
  - Use soundproofing materials and double-glazed windows.
  - Retain fences, walls, and landscaping that serve as noise buffers.
  - Orient delivery, loading docks, and outdoor work areas away from noise-sensitive areas.
- **Noise Element Policy H.** Discourage new projects that have potential to create ambient noise levels more than 5 dBA above existing background noise within 250 feet of sensitive receptors, (e.g., schools, hospitals, churches, residential uses, etc.).
- **Noise Element Policy I.** Require new noise sources to use best available control technology to minimize noise from all sources.
- **Noise Element Policy J.** Ensure that construction activities are regulated as to the hours of operation in order to avoid or mitigate noise impacts on adjacent noise-sensitive land uses.
- **Noise Element Policy K.** Require proposed development adjacent to occupied noise-sensitive uses to implement a construction-related noise mitigation plan that identifies the location of construction equipment storage and maintenance areas, and documents the methods that will be used to minimize impacts on adjacent noise-sensitive land uses, including, where needed, installation of temporary noise barriers.
- **Noise Element Policy L.** Require that all construction equipment utilize noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

City of Loma Linda, Municipal Code. The City of Loma Linda Noise Ordinance (Section 9.20.040, Land Use Compatibility for Community Noise Environments) stipulates that acceptable land use compatibility occurs when residential uses are exposed to noise below 55 dBA Ldn or CNEL and below 50 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.). Construction occurring any time except between 7:00 a.m. and 10:00 p.m. is considered to be a nuisance (Section 9.20.050, Prohibited Noises), except when a special temporary waiver is granted by the City Manager. Construction activities may exceed the acceptable noise levels between 7:00 a.m. and 8:00 p.m. as long as a temporary noise waiver is obtained from the City Manager and the equipment is properly equipped with mufflers. Heavy construction is not permitted on weekends or holidays (Section 9.20.070, Temporary Permit Procedures).

City of Rancho Cucamonga

City of Rancho Cucamonga, General Plan. Exterior noise levels below 60 dBA Ldn or CNEL are generally considered to be acceptable and compatible for residential areas. The City of Rancho Cucamonga, General Plan (2010) includes the following policies:

- **Policy PS-13.3.** Consider the use of noise barriers or walls to reduce noise levels generated by ground transportation noise sources and industrial sources.
- **Policy PS-13.4.** Require that acceptable noise levels are maintained near residences, schools, health care facilities, religious institutions, and other noise-sensitive uses in accordance with the Development Code and noise standards contained in the General Plan.
- **Policy PS-13.6.** Implement appropriate standard construction noise controls for all construction projects.

City of Rancho Cucamonga, Development Code. The Rancho Cucamonga municipal code specifies that residential land uses shall not receive noise levels over 60 dBA between 10:00 p.m. and 7:00 a.m. or over 65 dBA in the daytime. Exempt activities include noise sources associated with, or vibration created by, construction, repair, remodeling, or grading of any real property, provided that when adjacent to a residential land use, school, church or similar type of use, the construction does not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a holiday, and provided noise levels created do not exceed the noise standard of 65 dBA when measured at the adjacent property line (Section 17.66.050, Noise Standards).

City of Yucaipa

City of Yucaipa, General Plan. Exterior noise levels below 60 dBA Ldn or CNEL are generally considered to be acceptable and compatible for residential areas. The City of Yucaipa, General Plan (2004) includes the following policies:

- **Noise Element Goal N-1, Policy A.** Require that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses.
- **Noise Element Goal N-1, Policy B.** Includes the daytime standards for stationary noise sources of 55 dBA Leq and 75 dBA Lmax and nighttime (10:00 p.m. to 7:00 a.m.) standards of 45 dBA Leq and 65 dBA Lmax.

City of Yucaipa, Development Code. The Yucaipa municipal code specifies that residential land uses that are affected by stationary source noise shall not receive noise levels over 55 dBA Ldn or 55 dBA for a cumulative period of more than 30 minutes in any hour (Section 87.0905, Noise). These limits are reduced to 50 dBA for any source that contains a simple tone. Exempt activities include temporary construction, repair, or demolition activities between 7 a.m. and 7 p.m., except on Sundays and holidays.

City of San Bernardino

The City of San Bernardino's municipal code limits construction-related noise to between the hours of 7:00 a.m. and 8:00 p.m. (Section 8.54.070, Disturbances from Construction Activity). The City of San Bernardino only has noise level standards for transportation-related noise and currently does not have noise level standards for operation-related noise.

Unincorporated San Bernardino County

San Bernardino County, General Plan. The San Bernardino County General Plan (2007) includes the following policies:

- **Noise Element Goal N1.** The County will abate and avoid excessive noise exposures through noise mitigation measures incorporated into the design of new noise-generating and new noise-sensitive land uses, while protecting areas within the County where the present noise environment is within acceptable limits.
- **Noise Element Goal N1, Policy N1.3.** When industrial, commercial, or other land uses, including locally regulated noise sources, are proposed for areas containing noise-sensitive land uses, noise levels generated by the proposed use will not exceed the performance standards of the Development Code.
- **Noise Element Goal N2, Policy N2.1.** The County will require appropriate and feasible on-site noise attenuating measures that may include noise walls, enclosure of noise-generating equipment, site planning to locate noise sources away from sensitive receptors, and other comparable features.

San Bernardino County, Development Code. The noise ordinance for unincorporated San Bernardino County in the Development Code (2009) defines residential areas as being "noise-impacted" if it is exposed to exterior noise levels above 55 Ldn. The code specifies 60 dBA Ldn as the standard for new residential development in areas exposed to traffic noise. The noise ordinance also prohibits causing daytime noise over 55 dBA (between 7:00 a.m. and 10:00 p.m.) and nighttime noise over 45 dBA at residential uses if it occurs over a cumulative period of more than 30 minutes in any hour. Construction noise is exempt if the activities occur between 7:00 a.m. and 7:00 p.m. on any day except Sundays and holidays (Section 83.01.080, Noise).

City of Colton

City of Colton, Municipal Code. The Colton Municipal Code includes a zoning performance standard that limits noise between properties to no more than 65 dBA (Section 18.42.040, Noise). No exemption is provided for noise construction activity, although vibration by temporary construction or demolition is allowed (Section 18.42.050, Vibration). Generally loud, unnecessary, and unusual nuisance noise is prohibited if it would disturb the peace or quiet of any residents who may reside in the vicinity (Section 9.16.010, Prohibited-Penalty).

City of Grand Terrace

City of Grand Terrace, General Plan. The City of Grand Terrace General Plan (April 2010) includes:

- **Noise Element Policy 6.3.3.** Consider noise impacts to residential neighborhoods when designating truck routes, freeway improvements, and major circulation corridors.
- **Noise Element Policy 6.1.2.** Minimize the impacts of construction noise on adjacent land uses by limiting the permitted hours of activity.

City of Grand Terrace, Municipal Code. The Grand Terrace Municipal Code includes a noise ordinance that generally limits excessive noise if it disturbs, offends, injures or endangers the peace, quiet, comfort, repose, health or safety of any neighborhood or person in the City of Grand Terrace (Section 8.108.020, Loud, annoying, excessive and unnecessary noises prohibited). Construction noise and vibration is exempted as long as it takes place between 7:00 a.m. and 8:00 p.m. any day except Sundays and holidays (Section 8.108.040, Special activities). Between 10:00 p.m. and 7:00 a.m., nighttime use of heavy-duty construction equipment shall not be within 50 feet of an occupied residence (Section 8.108.050, Prohibited Noise).

City of Calimesa

City of Calimesa, General Plan. The City of Calimesa General Plan (August 2014) defines noise levels under 60 dBA CNEL as being completely compatible with residential use and levels between 60 and 70 dBA CNEL as tentatively compatible. The General Plan also includes the following noise goals and policies:

- **Goal N-1.** Ensure that all land uses are protected from excessive and unwanted noise.
- **Goal N-2.** Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses in Calimesa.
- **Policy N-4.** Encourage noise-tolerant land uses such as commercial or industrial development to locate in areas already committed to land uses that are noise-producing.
- **Policy N-5.** Ensure that noise-sensitive uses do not encroach into areas needed by noise-generating uses.
- **Policy N-7.** Consider the following uses to be sensitive to noise and vibration, and discourage these uses in areas where existing or projected future noise levels would be in excess of 65 dBA CNEL and/or vibration would be more than 0.0787 peak particle velocity (inches per second): schools; hospitals; rest homes; long-term care facilities; mental care facilities; residential uses; libraries; passive recreation uses; and places of worship.
- **Policy N-31.** Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- **Policy N-32.** Require that all construction equipment be kept properly tuned and use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

City of Calimesa, Municipal Code. The City of Calimesa has developed sound level limits in its Noise Ordinance (Section 8.15.040, Sound Level Limits). The ordinance states that single and low-density residential zones shall not be subject to noise levels greater than 50 dBA Leq in the daytime and 40 dBA Leq in the nighttime. It also specifically states that public utility facilities shall be allowed to operate at 50 dBA Leq in any location, continuous over 24 hours, and that electrical transmission lines are subject to these limits at or beyond 6 feet from the utility easement (Section 8.15.040, Sound Level Limits).

The Calimesa Municipal Code (Section 8.15.080, Construction Equipment) includes exemptions from these limits for noise caused by construction activities, provided that the activity occurs between 7:00 a.m. and 7:00 p.m. on weekdays or between 10:00 a.m. and 5:00 p.m. on weekends or holidays. No construction equipment is allowed to cause noise in excess of 75 dBA for more than eight hours during any 24-hour period when measured at a residential property line or more than 78 dBA over 4 hours. No intermittent construction noise is allowed over 84 dBA Leq (1-hour) or over 90 dBA L25 during any 15-minute period is also prohibited.

City of Beaumont

City of Beaumont, General Plan. The City of Beaumont General Plan (March 2007) includes a Health and Safety Element that addresses community noise and identifies 55 dBA as the desirable maximum and 65 dBA as the maximum acceptable exterior noise levels for single-family residential uses. The General Plan also includes:

- **Safety Element Policy 24.** The City of Beaumont will protect public health and welfare by eliminating existing noise problems and by preventing significant degradation of the future acoustic environment.

City of Beaumont, Municipal Code. The noise ordinance for the City of Beaumont (Section 9.02.030, Prohibited Noise in Residential Zones) restricts construction and demolition noise affecting residential uses to occur only between the hours of 6:00 a.m. and 8:00 p.m., although construction and repair of public utilities are exempt from the ordinance (Section 9.02.060, Prohibited Noise-Exemptions).

City of Banning

City of Banning, General Plan. The City of Banning General Plan (2006) includes:

- **Noise Element Policy 1.** The City shall protect noise-sensitive land uses, including residential neighborhoods, schools, hospitals, libraries, churches, resorts and community open space, from potentially significant sources of community noise.

City of Banning, Municipal Code. The City of Banning restricts noise affecting residential uses so that they do not exceed 75 dBA Lmax in the daytime or 65 dBA Lmax in the nighttime (Section 8.44.050, Base Ambient Noise Level; Section 8.44.070, Maximum Residential Noise Levels). The standards also include daytime noise levels not to exceed 60 dBA L25, and nighttime levels not to exceed 50 dBA L25, or during any 15-minute period in an hour. Loud, unusual, and unnecessary noises are also prohibited, including equipment causing noise increases of more than 5 dBA over the ambient and back-up beepers that exceed 75 dBA.

Construction activities may exceed the limits of the City of Banning noise ordinance between the hours of 7:00 a.m. and 6:00 p.m. provided that it does not at any time cause noise greater than 55 dBA L25 for an interval of more than 15 minutes per hour when measured in the interior of the nearest residence or school (Section 8.44.090, Noises Prohibited). The City Building Inspector may permit construction outside of these daytime hours if the official determines that public health and safety would not be impaired by the construction noise.

Unincorporated Riverside County

Riverside County, General Plan. The Riverside County Comprehensive General Plan (2014) includes:

- **Noise Element Policy N.1.1.** Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.
- **Noise Element Policy N.1.3.** Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL: schools, hospitals, rest homes, long-term care facilities, mental care facilities, residential uses, libraries, passive recreation uses, and places of worship. [. . .] an acoustical study may be required in an area of 60 CNEL or greater. Any land use that is exposed to levels higher than 65 CNEL will require noise attenuation measures.
- **Noise Element Policy N.1.4.** Determine if existing land uses will present noise compatibility issues with the Proposed Project by undertaking site surveys.
- **Noise Element Policy N.1.5.** Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.
- **Noise Element Policy N.1.8.** Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines.
- **Noise Element Policy N.3.6.** Discourage projects that are incapable of successfully mitigating excessive noise.

- **Noise Element Policy N.12.1.** Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- **Noise Element Policy N.12.2.** Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- **Noise Element Policy N.12.4.** Require that all construction equipment utilizes noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- **Circulation Element Policy C.3.28.** Reduce transportation noise through proper roadway design and coordination of truck and vehicle routing.

Riverside County Code. The Riverside County noise ordinance (Ordinance 847, effective 2007) includes sound level standards of 55 dB Lmax (7 am to 10 pm) and 45 dB Lmax (10 pm to 7 am) for residential areas and rural communities. The ordinance limits construction within one-quarter of a mile of an occupied residence unless it occurs in the daytime, between the hours of 6:00 a.m. and 6:00 p.m. (June through September) or between the hours of 7:00 a.m. and 6:00 p.m. (October through May). Exceptions to the construction limitation may be made by the Director of Building and Safety.

D.13.3 Environmental Impacts of the Proposed Project

D.13.3.1 Approach to Impact Assessment

The combined maximum (Lmax) and average hourly (Leq) noise levels for construction work sites are predicted by using a national model and construction equipment noise database in the Roadway Construction Noise Model (RCNM) from the Federal Highway Administration (FHWA). Typical work sites would include overlapping or combined use of equipment such as a grader, dozer, and compactor along with trucks. The noise level estimates take into account a reference maximum noise level for each piece of equipment, the quantity of equipment, a usage factor percentage, the distance to receptor, and a ground effect factor. The results are the sum of noise levels that would be experienced by typical receptors at a certain distance, usually 50 feet. Calculations account for the reduction of noise with distance due to geometric divergence and determine the levels for receptors at other specific distances.

Table D.13-4 shows that, aside from helicopters, the loudest equipment would cause intermittent noise at levels of 85 dBA Lmax or lower.

Table D.13-4. Typical Noise Levels for Individual Construction Equipment

Equipment	Typical Lmax (dBA, at 50 feet)	Typical Leq (dBA, at 50 feet)
Drill rig, auger	84	77
Crane	81	73
Backhoe	78	74
Excavator	81	77
Grader	85	81
Compactor	83	76
Dozer	82	78
Dump truck, haul truck	76	73
Truck, crew truck	75	62-71
Helicopter, crew (Bell 500)	est. 95.9 dBA at 100 feet	
Helicopter, for lifting (Kmax)	est. 84 dBA at 250 feet	

Lmax: Maximum noise level from Actual Measured in RCNM (FHWA, 2006).
Leq: Equivalent noise level for one hour incorporating the Acoustical Usage Factor.
Helicopter estimates are for approximately 15 minutes of use in one hour (equivalent to L25 over one hour).
Source: SCE, 2013 (PEA Appendix K).

D.13.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures (APMs) relevant to noise.

D.13.3.2 Impact Criteria

The level of noise impacts depends on whether the project would increase noise levels above the existing ambient levels by introducing new sources of noise. NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). Using the following criteria for the purposes of analysis, the project or an alternative would create potential noise impacts if:

- The Proposed Project would conflict with applicable noise restrictions or standards imposed by regulatory agencies.
- The Proposed Project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.
- Operation of the Proposed Project would result in a substantial permanent increase in ambient noise levels above levels existing without the project at sensitive receptors.
- The Proposed Project would result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project at sensitive receptors.

Given that environmental noise levels vary widely over time, a three dBA change is the minimum change in environmental noise that is perceptible and recognizable by the human ear. Permanent increases in day-night environmental noise levels of more than five dBA (Ldn or CNEL) are considered to be substantial. Intermittent noise sources, such as those typical during construction, are temporary or periodic and normally cease after a short duration. Factors to be considered in determining the level of an adverse impact caused by an intermittent source include: (1) the resulting noise level, (2) the duration and frequency of the noise, (3) the number of people affected, and (4) the land use designation of the affected receptor sites.

D.13.3.3 Impacts and Mitigation Measures

Impacts During Construction and Restoration Activities

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Proposed Project would involve use of heavy equipment such as drill rigs, cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction of foundations for new towers, poles, and shoo-fly structures would require use of a drill rig or large auger at each location. Pile driving equipment could be used for the installation of soldier pile-type retaining walls, though most are expected to be drilled piers. Access and spur roads would require use of graders, compactors, dozers, and trucks. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

SCE's description of the project includes the potential for rock blasting and/or use of explosives for implosive sleeves during construction of foundations and to fuse wire segments, respectively. However, if these construction methods are used, they would create instantaneous or short-term noise.

Construction Noise Disturbances. Intermittently elevated noise levels would occur in the vicinity of substations undergoing modifications, along the linear routes of the new and modified 220 kV transmission and 66 kV subtransmission facilities, along the routes of new telecommunications infrastructure, at staging yards, and at helicopter staging areas including local airports. Aside from the increased noise at project worksites, construction-related truck traffic and worker commutes would increase noise along region-serving roadways, city streets, and ROW access and spur roads. Most activity would occur within the ROW of the linear facilities throughout the corridor.

Noise from equipment and traffic during construction would occur for approximately 36 to 48 months throughout approximately 48 miles of 220 kV corridor. The increased noise levels would be highly variable depending on the proximity of the source to any receptor and the intensity of the construction or restoration activity. Construction noise is made up of intermittent peaks and lower levels of continuous or residual noise from equipment movements or sporadic activity. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels.

All construction noise would diminish over distance and would be reduced by any intervening structures or topography. At any one site, a combination of multiple pieces of equipment may be present. Aggregated peak noise levels of up to about 85 dBA Lmax would occur for locations within 50 feet from the construction without accounting for controls or intervening barriers (SCE, 2013). Certain instances would result in greater levels of noise exposure, with peak noise levels up to 88.2 dBA Lmax occurring where some construction activity and boundaries of staging yards would be as near as 10 to 15 feet from some residences. At 100 feet from work sites, the distance would attenuate the peak levels to about 79 dBA Lmax, and at 200 feet to 73 dBA Lmax. Continuously steady construction noise levels (Leq) would be roughly one to 10 dBA below the Lmax levels.

Table D.13-5 summarizes the noise levels that would intermittently occur near sites of heavy equipment use at various distances, excluding helicopters. These levels show that at distances over 1,400 feet, steady construction noise would be under 55 dBA or under the level that would avoid interfering with outdoor activities (see Table D.13-3). Construction at these distances would tend to fade into daytime background noise levels, except for sites isolated from existing urban or suburban noise. For residential areas, schools, hospitals, and outdoor recreation areas within 1,400 feet, including the Pacific Crest Trail in Segment 6, the resulting noise levels would substantially disturb sensitive receptors during construction activity. Mitigation Measure N-1a (Implement best management practices for construction noise) is recommended as a means of reducing the adverse effects of temporary construction noise.

Table D.13-5. Construction Noise Levels Versus Distance

Distance from Sources (ft)	Typical Lmax (dBA)	Typical Leq (dBA)
50	85.0	83.6
100	79.0	77.5
135	76.4	74.9
200	73.0	71.5
400	66.9	65.5
1,200	57.4	56.0
1,400	56.1	54.6

Note: Combined effects of heavy equipment used during 220 kV and 66 kV installation or access and spur roads construction, excluding helicopters.
Source: SCE, 2013 (PEA Appendix K) at distances calculated by Aspen Environmental Group.

Table D.13-6 summarizes the modeled noise levels for specific locations, including substations and along the linear telecommunications facilities.

Table D.13-6. Construction Noise Levels Modeled for Specific Locations (dBA)

Location	Typical Receptor Distance (ft)	Receptor Jurisdiction	Lmax (dBA)	Leq (dBA)
San Bernardino Substation	875	Redlands	59.5	52.3
Vista Substation	50	Grand Terrace	84.4	83.3
El Casco Substation	950	Calimesa	55.1	49.5
Devers Substation	1,000	Riverside County	58.4	50.3
Etiwanda Substation	50	Rancho Cucamonga	75.0	71.0
Telecommunications Facilities	50	Typical Facilities	77.6	76.8

Source: SCE, 2013 (PEA Appendix K).

Table D.13-7 summarizes the anticipated construction noise levels that would occur at staging areas for the Proposed Project.

Table D.13-7. Construction Staging Area Noise Levels Modeled (dBA)

Location	Typical Receptor Distance (ft)	Receptor Jurisdiction	Lmax (dBA)	Leq (dBA)
Staging Yards (Typical)	50	Any Staging Yard	75.0	65.0
Mountain View No.1 Material and Equipment Staging Area	14	San Bernardino	86.1	76.1
Lugonia Material and Equipment Staging Area	1,094	Redlands	48.2	38.2
Grand Terrace Material and Equipment Staging Area	320	Grand Terrace	58.9	48.9
San Timoteo Material and Equipment Staging Area	11	Riverside County	88.2	78.2
Poultry Material and Equipment Staging Area	52	Riverside County	74.7	64.7
Beaumont No. 1 Material and Equipment Staging Area	374	Beaumont	57.5	47.5
Beaumont No. 2 Material and Equipment Staging Area	253	Beaumont	60.9	50.9
Matich Yard	50	Banning	75	65
Hathaway No. 1 Material and Equipment Staging Area	52	Banning	74.7	64.7
Hathaway No. 2 Material and Equipment Staging Area	54	Banning	74.3	64.3
Devers Material and Equipment Staging Area	2,000	Riverside County	25.5	15.5

Source: SCE, 2013 (PEA Appendix K).

Helicopters. The range of proposed helicopter activities for the construction of the transmission lines could include delivery of equipment and materials from staging yards to structure sites, structure placement, hardware installation, and conductor and/or optical ground wire (OPGW) stringing operations. Helicopter use could occur at any location in the Proposed Project area, including staging areas, ground locations in close proximity to conductor and/or OPGW pulling, tensioning, and splice sites, including locations in previously disturbed areas near construction sites. In addition, helicopters may need to land within SCE ROWs, which could include landing on access or spur roads. Refueling could occur in the staging areas, ROWs or access or spur roads, or at local airports (SCE, 2013).

Helicopter operations would likely cause annoyance to residences in the vicinity. These would be temporary impacts, as helicopters string conductors or deliver loads and then leave an area. SCE's Preliminary Helicopter Use Plan appears in this EIS at the end of Section D.16 (Transportation and Traffic). The final Helicopter Use Plan that must be created with SCE's selected construction contractor. The Helicopter Use Plan is described in Mitigation Measure T-7a (Prepare and implement a final helicopter use plan), in Section D.16.3.3 (Transportation and Traffic, Impacts and Mitigation Measures).

SCE identifies two specific helicopter models that typically would be used to carry loads, the Bell 500 (MD 500) and the Kaman Kmax. Each helicopter could be operated as near as 250 feet from the ground and residences. Residences and other locations along the project corridor would experience between 84 and 88 dBA Leq, depending on the helicopter type (SCE, 2013). Because hovering would generally occur for 15-minute periods, the impact could be up to 88 dBA L25 in any given hour of helicopter operations as experienced by receptors within 250 feet of the hovering. Mitigation Measure N-1b (Implement a helicopter noise control strategy) is recommended.

Project components and activities would occur in the vicinity of an existing heliport (Loma Linda University Medical Center) and public airports in San Bernardino, Redlands, and Banning. There are no private airstrips in the vicinity of the project. The Proposed Project would not introduce people to excessive noise from these public airports. Project-related helicopter operations would temporarily add to existing noise levels near local airports because project-related landings and take-offs would occasionally occur at public airports, where helicopters and support equipment may be based (SCE, 2013). Because project-related helicopter operations would occur only occasionally at local airports, the Proposed Project would not substantially change the levels of noise from aircraft in the vicinity of existing public airports or private airstrips.

Construction Noise Compliance with Local Ordinances. Noise ordinances usually provide exemptions for construction activities occurring during normal daytime, weekday hours. In the cities of Calimesa and Banning, the local noise ordinances contain specific noise level standards for construction activity. In the City of Calimesa, SCE proposes to coordinate with the city to minimize any potential conflicts with the local noise standards. In all locations, SCE proposes to consult with relevant jurisdictions before commencing work within those localities for time-sensitive work or nighttime work outside of the time periods allowed by the local jurisdiction for construction. For example, it may be necessary to work during the nighttime or outside normal work hours to facilitate major crossings, or when loads on the lines are reduced.

Any location near heavy equipment used during construction of facilities for the 220 kV and 66 kV components or during access and spur roads construction could occasionally experience construction noise at levels shown in Table D.13-5. A combined level of 83.6 dBA Leq at 50 feet and 85.0 dBA Lmax at 50 feet would occur. Other than the cities of Calimesa and Banning, none of the other jurisdictions along the corridor has specific construction noise level standards. The City of Calimesa's standard of 78 dBA over 4 hours would be exceeded at any distance less than 95 feet from the edge of construction activity.

Helicopter noise could be up to 88 dBA L25 in any given hour of helicopter operations as experienced by receptors within 250 feet of the hovering. Locations in Calimesa within 250 feet would experience helicopter noise exceeding the 90 dBA L25 standard. Because most structures that house receiving land uses would not sufficiently insulate occupants from helicopter noise (20 dBA typical exterior-to-interior reduction), helicopter noise at 88 dBA on the exterior would translate to 68 dBA for interiors, which would also exceed the City of Banning's interior standard of 55 dBA L25 for construction.

In its PEA (Section 4.12.2.3), SCE states that it would comply with local noise ordinances to the extent practicable. In addition, SCE states that where work may need to occur outside of local ordinance timeframes, SCE would coordinate with local authorities to minimize conflicts with the applicable ordinances. The discussion above demonstrates that violations of local standards could occur and work could be needed outside of the time periods allowed. In order to minimize the impact of the project conflicting with local noise ordinances, mitigation has been developed to avoid potential violations during construction or to minimize the effect of unavoidable violations. With implementation of the recommended mitigation measures, the construction activities would either comply with local noise ordinances, or SCE would coordinate with local authorities to implement controls and reduce noise impacts during periods of ordinance violation, if there is a need to work outside of normal daytime, weekday hours. Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) would reduce the potential for violations of the local standards by requiring feasible noise controls.

Summary for Construction Noise. Receptors would be intermittently exposed to noise levels that could disturb sensitive receptors and interfere with outdoor activities in areas located within 1,400 feet of active construction. Additionally, the noise of helicopter overflights and work during the nighttime or outside normal work hours would not only exceed ambient levels but also would be likely to create violations of local standards. To reduce the adverse effects of temporary construction noise, the following mitigation measures are proposed.

Mitigation Measures for Impact N-1

N-1a **Implement best management practices for construction noise.** SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors and to avoid possible violations of local rules, standards, and ordinances during construction:

- Construction noise shall be confined to daytime, weekday hours (7:00 a.m. to 6:00 p.m.) or an alternative schedule developed by SCE based on its coordination with the local jurisdiction.
- Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Stationary noise sources (e.g., generators, pumps) at staging areas and on the ROW within 1,4000 feet of sensitive receptors shall be shielded at the source to the extent feasible. Examples of feasible shielding may include an enclosure, temporary sound walls, or acoustic blankets. For best performance, sound walls or acoustic blankets shall have a height of no less than 8 feet, a Sound Transmission Class (STC) of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts.
- Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible.
- Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, its engine should be shut off.

N-1b **Implement a helicopter noise control strategy.** As part of the final Helicopter Use Plan, SCE shall include a helicopter noise control strategy that identifies the established helicopter flight corridors and minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground. The noise control strategy shall prohibit helicopter hovering (greater than 15 minutes) within 250 feet of residences in any vertical or horizontal direction.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities along the linear routes of the new and modified 220 kV transmission and 66 kV subtransmission facilities, along the routes of new telecommunications infrastructure, and at staging yards would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit. The highest levels of vibration would be caused by a typical large bulldozer or by caisson drilling with an auger for the concrete footings of structures.

The Proposed Project may include the use of explosives or blasting that could cause ground-borne vibration. Impact pile driving equipment could be also used for the installation of soldier pile-type retaining walls, though most are expected to be drilled piers. These activities would not be expected to be at levels capable of causing structural damage to buildings in the immediate vicinity. Other construction activities would not involve sources likely to cause any structural damage outside of the work areas.

Vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, impact pile driving for installing retaining walls, and drilling or rock blasting for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. The impact results in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site. Construction of new towers or poles may occur as near as 40 feet from the nearest residences (SCE, 2013). Vibration levels would be perceptible at this distance from the source.

Installing towers, poles, or underground duct banks and conduit could cause vibration levels that could cause some persons to become annoyed, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. Project-related vibration would not occur at levels that could cause any structural damage. Impacts from vibrations would be temporary (e.g., no more than two or three days at each site) and localized and, therefore, would not be excessive.

Impacts During Operations and Maintenance

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

The Proposed Project would introduce long-term sources of noise related to the audible corona effect of the 220 kV lines, which occurs with normal and routine operation. Project transmission line corona noise would occur in the same corridor as the existing 220 kV system, where the typical level with wet conductors is about 40 dBA, and Proposed Project noise would be of the same nature. The Proposed Project would not introduce any new notable noise source at project substations, subtransmission lines, and telecommunications facilities, and the 66 kV subtransmission lines would not be a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions.

The addition of the upgraded 220 kV transmission lines would change the corona noise levels along all portions of the corridor. Along the corridor, except in Segment 2, SCE expects the upgraded 220 kV lines to cause a maximum of 36.9 dBA Leq at the edge of the ROW under heavy rain conditions and 33.4 dBA during high humidity or normal rain; in Segment 2, the maximum would be 34.9 dBA Leq under heavy rain conditions and 31.4 dBA during high humidity or normal rain (SCE, 2013; SCE, 2014a). During a heavy rain, the sound of rain on surfaces would generally be greater than the worst-case corona noise.

The highest corona noise levels would comply with all local ordinances including the City of Calimesa requirement that public utility facilities cause no more than 50 dBA Leq continuous over 24 hours. Corona noise levels could decrease along the edges of the existing 220 kV transmission lines as a result of the Proposed Project for the locations where the proposed reconfiguration of the transmission structures causes lines to be further from receptors than in the existing conditions.

Table D.13-8 shows the existing calculated project plus existing worst-case noise levels expected with the corona noise from the Proposed Project along the corridor. Corona noise during high humidity, fog, or rain would exceed ambient fair weather corona noise levels, with the greatest potential for impact during nighttime hours when ambient noise levels are lowest. During heavy rain and the most-quiet nighttime hours, the increase over short-term minimum noise levels (Lmin) could be as great as 10 dBA (e.g., monitoring location LT-1), which would be a substantial difference of more than five dBA. However, the difference would not be substantial over a 24-hour period when daytime ambient levels are higher. For all locations, permanent day-night or 24-hour noise levels (Ldn or CNEL) would not substantially increase due to corona noise for any segment of the Proposed Project.

Table D.13-8. Proposed Project Corona Noise Levels

Location	Jurisdiction	SCE Monitor	Observed During 24-hr Period	Existing (dBA)	Project plus Existing (dBA)
Segment 1					
Nelson Street	Loma Linda	LT-2	Leq (min.)	40.7	42.2
		LT-2	Leq (max.)	55.8	55.9
		LT-2	Ldn	54.3	54.7
Segment 2					
Prado Lane	Colton	LT-1	Leq (min.)	25.2	35.3
		LT-1	Leq (max.)	52.5	52.6
		LT-1	Ldn	46.7	47.8
Segment 3					
No 24-hour measurements in Segment 3		—	—	—	—
Segment 4					
O'Grady Court, near El Casco	Beaumont	LT-3	Leq (min.)	37.9	40.4
		LT-3	Leq (max.)	58.3	58.3
		LT-3	Ldn	52.2	52.7
Cedar View Drive, near Beaumont Ave	Beaumont	LT-4	Leq (min.)	43.8	44.6
		LT-4	Leq (max.)	51.8	51.9
		LT-4	Ldn	53.4	53.8
Segment 5					
No 24-hour measurements in Segment 5		—	—	—	—
Segment 6					
San Pierre Road, Whitewater	Riverside County	LT-5	Leq (min.)	45.3	45.9
		LT-5	Leq (max.)	63.8	63.8
		LT-5	Ldn	60.7	60.8

Leq: Equivalent noise level of all of the time-varying sound energy during one hour (observed by SCE during 24-hr measurement).
Ldn: day-night level calculated from 24 hours of equivalent sound level data with a 10 decibel penalty between 10:00 p.m. and 7:00 a.m.
Source: SCE, 2013 (PEA Table 4.12-3), with Project (during heavy rain) plus Existing calculated by Aspen Environmental Group.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

SCE proposes to accomplish normal and routine operation of the lines through SCE control systems based remotely and manually along the corridors and at substations, as required. As in the existing conditions, SCE would inspect the transmission, subtransmission, telecommunications, and distribution overhead facilities at least once per year via ground and/or aerial observation. Maintenance would occur as needed and could include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and structures, tree trimming, brush and weed control, and access road maintenance. Each of these activities normally requires daytime use of crew trucks with occasional short-term assistance via helicopter (SCE, 2013). The operation-related activities would not be notably different from that caused by inspection and maintenance of the existing facilities, and the noise from these temporary but recurring activities would not be notably different. The occasional nature of such continued maintenance activities ensures that permanent ambient noise levels would not be adversely affected.

D.13.3.4 Impacts of Connected Actions

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Desert Center Area. The Palen Solar Power Project site is in the Desert Center area. The environmental analysis for this project concluded that during construction any increase in noise levels at the nearest off-site residences would be temporary, and would not generate continuously high noise levels, although occasional single-event disturbances from grading, trenching, and construction are possible. Mitigation applied to the project for temporary construction noise impacts included:

- Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.
- The project owner shall submit to the CPM for review and approval a noise control program.
- Project will design and implement noise mitigation measures that include noise restrictions.
- If a traditional high-pressure steam blow process is used, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 89 dBA measured at a distance of 100 feet.

The Desert Harvest Solar Project also is the Desert Center area. The environmental analysis for this solar project concluded that construction of the facility would involve a few periods when construction activity would be within 6,500 feet of the closest occupied residence. This project was also subject to the National Park Service performance standard for noise mitigation, which is to limit noise levels at the Park boundary to 35 dBA. The analysis found construction would meet this stated goal. Mitigation for temporary construction noise impacts included:

- Limiting construction hours near occupied residences.
- Generate no net increase in noise within Joshua Tree National Park. If noise as a result of on-site project construction exceeds 35 dBA Leq (1-hour) within the Park boundary, a noise attenuation barrier is to be erected around the project construction activities.

Other projects identified as connected actions in the Desert Center area include the development of solar PV projects on 2,400 acres. The specific locations of these solar developments are unknown. Because each regional and local jurisdiction defines its own noise regulations and standards, any specifics regarding applicable noise regulations also are unknown for these projects. However, typical noise levels during construction and expected mitigation measures for these projects would be similar to those described for other solar projects, including the Desert Harvest project.

Blythe Area. Connected actions in the Blythe area include 3 individual solar PV projects requiring 4,200 acres. The precise locations of these solar projects are unknown. Applicable noise regulations thus also are unknown, but likely would be those of Riverside County. Typical noise levels during construction and expected mitigation measures for these connected action projects would be similar to those described for solar projects elsewhere in the desert.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Common to all Areas. Construction and site restoration activities may result in minor amounts of groundborne vibration. Impacts from construction vibration would be temporary and localized, because groundborne vibration would be infrequent and it attenuates rapidly as distance from the source increases. Therefore, vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities, but persons and buildings further than 100-300 feet away from construction activity typically would not be impacted by construction vibration. Due to typical setback requirements, the primary source of possible construction vibration at the perimeter of a solar PV facility is associated primarily with fence and landscape installation. Equipment used during these construction activities would not produce adverse vibration levels. Therefore, it is expected that construction-related vibration from the project would not occur at levels that could disturb people or cause any structural damage.

Impact N-3: Operational noise levels would increase

Common to all Areas. Typical noise sources associated with solar facility operations and maintenance include employee vehicles accessing the site, power inverters, tracking motors on individual panels (if installed), and maintenance of the panels, such as cleaning and repair. Based on a review of noise assessments prepared for solar development projects in Southern California, a typical power inverter generates 66 dBA Leq measured at a distance of 50 feet without an enclosure. The tracking motors that tilt an array of panels typically generate 38 dBA Leq at 50 feet. Maintenance, panel washing, and cleaning of the facility generate approximately 76 dBA Leq at 50 feet. However, this noise would be periodic and temporary. Because solar facilities operations and maintenance require a small number of employees, increased traffic noise associated with employees would be negligible. Noise from operational activities is primarily limited to daytime hours and would occur within the project site, with little noise spillover into adjacent areas. Therefore, operation of the connected action solar PV project is not expected to result in adverse permanent increases to ambient noise levels at nearby receptors. For example, for the Palen Solar Power Project the environmental analysis concluded that daytime noise level increases would not exceed 3 dBA above the ambient noise level at the nearest sensitive receptor. In general, a difference of 3 dBA or less is not a perceptible change in environmental noise.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

The potential for adverse increases in ambient noise levels from routine inspection and maintenance activities of the connected action projects is low, as discussed above for Impact N-3. The analysis presented for Impact N-3 applies to Impact N-4.

D.13.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.13.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Noise conditions within the ROW are described by segment in Section D.13.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.13.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Four impacts related to noise were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.13.3.3, except where otherwise noted.

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Proposed Project would involve use of heavy equipment such as drill rigs, cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction of foundations for new towers, poles, and shoo-fly structures would require use of a drill rig or large auger at each location. Access and spur roads would require use of graders, compactors, dozers, and trucks. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

Noise from equipment and traffic during construction would occur throughout approximately 48 miles of 220 kV corridor. Because of construction phasing, noise at any one work location would be periodic rather than constant for the duration of the construction period. The increased noise levels would be highly variable depending on the proximity of the source to any receptor and the intensity of the construction or restoration activity. Construction noise is made up of intermittent peaks and lower levels of continuous or residual noise from equipment movements or sporadic activity. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels.

All construction noise would diminish over distance and would be reduced by any intervening structures or topography. At any one site, a combination of multiple pieces of equipment may be present. Aggregated peak noise levels of up to about 85 dBA Lmax would occur for locations within 50 feet from the construction without accounting for controls or intervening barriers (SCE, 2013). Certain instances would result in greater levels of noise exposure, with peak noise levels up to 88.2 dBA Lmax occurring where some construction activity and boundaries of staging yards would be as near as 10 to 15 feet from some residences. At 100 feet from work sites, the distance would attenuate the peak levels to about 79 dBA Lmax, and at 200 feet to 73 dBA Lmax. Continuously steady construction noise levels (Leq) would be roughly one to 10 dBA below the Lmax levels.

Receptors would be intermittently exposed to noise levels that could disturb sensitive receptors and interfere with outdoor activities in areas located within 1,400 feet of active construction. Additionally, the noise of helicopter overflights and work during the nighttime or outside normal work hours would not only exceed ambient levels but also would be likely to create violations of local standards.

The relocated towers would be moved approximately 50 feet farther from the southern edge of the ROW. The adjustment to the location of these towers would reduce the severity of the adverse noise effect for the nearest sensitive receptors, because the construction would occur further from residences. The level of construction noise attenuates with increased distance from the source. Noise levels decrease by approximately 6 dBA with each doubling of distance from the source. For the relocated towers in Segments 4, 5, and 6, noise levels would decrease at the nearest sensitive receptors proportionally. These decreases in construction noise levels would reduce the severity of this adverse effect for noise. However, noise levels for construction of the relocated towers would remain above 55 dBA or above the level that would avoid interfering with outdoor activities. During the construction timeframe for the relocated towers, ambient noise levels would be increased by more than 5 dBA Leq, which represents a substantial adverse effect. Although this alternative would decrease noise levels for several sensitive receptors, the extended construction timeframe for this alternative (up to one year longer than the Proposed Project) would increase the duration of this adverse effect.

Noise from equipment and traffic during construction of the Tower Relocation Alternative would occur for approximately 36 to 60 months throughout approximately 48 miles of 220 kV corridor, which would be up to one year longer than construction noise for the Proposed Project. This extended construction timeframe would increase the duration of this adverse effect.

Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) are a means of reducing the adverse effects of temporary construction noise.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit. The highest levels of vibration would be caused by a typical large bulldozer or by caisson drilling with an auger for the concrete footings of structures.

Vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, impact pile driving for installing retaining walls, and drilling or rock blasting for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. The impact results in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site.

Installing towers, poles, or underground duct banks and conduit could cause vibration levels that could cause some persons to become annoyed, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. Project-related vibration would not occur at levels that could cause any structural damage. Impacts from vibrations would be temporary (e.g., no more than two or three days at each site) and localized and, therefore, would not be excessive.

As with the Proposed Project, vibration from construction equipment and activities in the Tower Relocation Alternative would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, and drilling for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. This adverse effect would result in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site.

The 50-foot adjustment to the location of these towers would reduce the severity of adverse groundborne vibration due to construction of those towers for the nearest sensitive receptors. In the Proposed Project, construction of new towers or poles may occur as near as 40 feet from the nearest residences. Vibration levels would be perceptible at this distance from the source. Installing towers, poles, or underground duct banks and conduit could cause vibration levels that could annoy some people, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. The Tower Relocation Alternative would ensure that sensitive receptors near to the relocated towers are not adversely affected by groundborne vibration by moving construction activity more than 50 feet away from the nearest sensitive receptors. However, even with the relocation of several towers farther away from the nearest sensitive receptors, the use of heavy construction equipment and temporary disturbance activities (such as during grading or for installing retaining walls) would remain an adverse effect for locations closer than 150 feet to sensitive receptors.

Construction-related vibration in this alternative would not occur at levels that would cause any structural damage. Adverse effects from vibrations would be temporary and localized and, therefore, would not be excessive.

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

The Proposed Project would introduce long-term sources of noise related to the audible corona effect of the 220 kV lines, which occurs with normal and routine operation. Project transmission line corona noise would occur in the same corridor as the existing 220 kV system, where the typical level with wet conductors is about 40 dBA, and Proposed Project noise would be of the same nature. The Proposed Project would not introduce any new notable noise source at project substations, subtransmission lines, and telecommunications facilities, and the 66 kV subtransmission lines would not be a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions.

The addition of the upgraded 220 kV transmission lines would change the corona noise levels along all portions of the corridor. Along the corridor, except in Segment 2, SCE expects the upgraded 220 kV lines to cause a maximum of 36.9 dBA Leq at the edge of the ROW under heavy rain conditions and 33.4 dBA during high humidity or normal rain; in Segment 2, the maximum would be 34.9 dBA Leq under heavy rain conditions and 31.4 dBA during high humidity or normal rain (SCE, 2013; SCE, 2014a). During a heavy rain, the sound of rain on surfaces would generally be greater than the worst-case corona noise.

The increased distance from the relocated towers to the nearest residences would reduce the severity of the operational adverse noise effect due to corona noise. The level of corona noise attenuates with increased distance from the source. Corona noise levels would decrease along the edges of the existing 220 kV transmission lines as a result of this alternative for the locations where the reconfiguration of the transmission structures causes lines to be further from receptors than in the existing conditions.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

SCE proposes to accomplish normal and routine operation of the lines through SCE control systems based remotely and manually along the corridors and at substations, as required. As in the existing conditions, SCE would inspect the transmission, subtransmission, telecommunications, and distribution overhead facilities at least once per year via ground and/or aerial observation. Maintenance would occur as needed and could include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and structures, tree trimming, brush and weed control, and access road maintenance. Each of these activities normally requires daytime use of crew trucks with occasional short-term assistance via helicopter (SCE, 2013). The operation-related activities would not be notably different from that caused by inspection and maintenance of the existing facilities, and the noise from these temporary but recurring activities would not be notably different. The occasional nature of such continued maintenance activities ensures that permanent ambient noise levels would not be adversely affected.

The adjustment to the location of particular towers under the Tower Relocation Alternative would not substantially alter operational noise levels from periodic inspection and maintenance activities compared to the Proposed Project.

D.13.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Four impacts were identified under the Proposed Project for noise. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.13.3.3, except where otherwise noted.

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Iowa Street 66 kV Underground Alternative would involve use of heavy equipment such cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

Construction of this underground segment in Iowa Street would increase the severity of the adverse noise effect for the nearest sensitive receptors to this portion of the project as compared to the Proposed Project. For the underground subtransmission line, noise levels would increase at the nearest sensitive receptors due to the increased ground disturbance, including trenching. During the construction timeframe for the underground subtransmission line, ambient noise levels would be increased by more than 5 dBA Leq, which represents a substantial adverse effect. Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) are recommended as a means of reducing the adverse effects of temporary construction noise.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit.

The same as in the Proposed Project, vibration from construction equipment and activities in the Iowa Street 66 kV Underground Alternative would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, and drilling for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. This adverse effect would result in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Construction-related vibration in this alternative would not occur at levels that would cause any structural damage. Adverse effects from vibrations would be temporary and localized and, therefore, would not be excessive.

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

An overhead 66 kV subtransmission line is not a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions. This alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. For receptors nearest to the underground portion of the subtransmission line, any corona noise would be eliminated because the conductors would be entirely buried for that 1,600-foot segment.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

This alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. Given the developed nature of Iowa Street, installation of this short underground segment would not substantially alter operational noise resulting from periodic inspection and maintenance activities compared to the Proposed Project.

D.13.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Four impacts were identified under the Proposed Project for noise. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less extensive construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.13.3.3, except where otherwise noted.

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Proposed Project would involve use of heavy equipment such as drill rigs, cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction of foundations for new towers, poles, and shoo-fly structures would require use of a drill rig or large auger at each location. Pile driving equipment could be used for the installation of soldier pile-type retaining walls, though most are expected to be drilled piers. Access and spur roads would require use of graders, compactors, dozers, and trucks. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

SCE's description of the project includes the potential for rock blasting and/or use of explosives for implosive sleeves during construction of foundations and to fuse wire segments, respectively. However, if these construction methods are used, they would create instantaneous or short-term noise.

Construction Noise Disturbances. Intermittently elevated noise levels would occur in the vicinity of substations undergoing modifications, along the linear routes of the new and modified 220 kV transmission and 66 kV subtransmission facilities, along the routes of new telecommunications infrastructure, at staging yards, and at helicopter staging areas including local airports. Aside from the increased noise at project worksites, construction-related truck traffic and worker commutes would increase noise along region-serving roadways, city streets, and ROW access and spur roads. Most activity would occur within the ROW of the linear facilities throughout the corridor.

Noise from equipment and traffic during construction would occur for approximately 36 to 48 months throughout approximately 48 miles of 220 kV corridor. The increased noise levels would be highly variable depending on the proximity of the source to any receptor and the intensity of the construction or restoration activity. Construction noise is made up of intermittent peaks and lower levels of continuous or residual noise from equipment movements or sporadic activity. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels.

All construction noise would diminish over distance and would be reduced by any intervening structures or topography. At any one site, a combination of multiple pieces of equipment may be present. Aggregated peak noise levels of up to about 85 dBA Lmax would occur for locations within 50 feet from the construction without accounting for controls or intervening barriers (SCE, 2013). Certain instances would result in greater levels of noise exposure, with peak noise levels up to 88.2 dBA Lmax occurring where some construction activity and boundaries of staging yards would be as near as 10 to 15 feet from some residences. At 100 feet from work sites, the distance would attenuate the peak levels to about 79 dBA Lmax, and at 200 feet to 73 dBA Lmax. Continuously steady construction noise levels (Leq) would be roughly one to 10 dBA below the Lmax levels.

At distances over 1,400 feet, steady construction noise would be under 55 dBA or under the level that would avoid interfering with outdoor activities. Construction at these distances would tend to fade into daytime background noise levels, except for sites isolated from existing urban or suburban noise. For residential areas, schools, hospitals, and outdoor recreation areas within 1,400 feet, including the Pacific Crest Trail in Segment 6, the resulting noise levels would substantially disturb sensitive receptors during construction activity.

The range of proposed helicopter activities for the construction of the transmission lines could include delivery of equipment and materials from staging yards to structure sites, structure placement, hardware installation, and conductor and/or optical ground wire (OPGW) stringing operations. Helicopter use could occur at any location in the Proposed Project area, including staging areas, ground locations in close proximity to conductor and/or OPGW pulling, tensioning, and splice sites, including locations in previously disturbed areas near construction sites. In addition, helicopters may need to land within SCE ROWs, which could include landing on access or spur roads. Refueling could occur in the staging areas, ROWs or access or spur roads, or at local airports (SCE, 2013).

Helicopter operations would likely cause annoyance to residences in the vicinity. These would be temporary impacts, as helicopters string conductors or deliver loads and then leave an area. Project components and activities would occur in the vicinity of an existing heliport (Loma Linda University Medical Center) and public airports in San Bernardino, Redlands, and Banning. There are no private airstrips in the vicinity of the project. Project-related helicopter operations would temporarily add to existing noise levels near local airports because project-related landings and take-offs would occasionally occur at public airports, where helicopters and support equipment may be based (SCE, 2013). Because project-related helicopter operations would occur only occasionally at local airports, the activity would not substantially change the levels of noise from aircraft in the vicinity of existing public airports or private airstrips.

The Phased Build Alternative would require similar noise-generating activities as the Proposed Project. The same as for the Proposed Project, construction of the Phased Build Alternative would involve the use of heavy equipment. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Most construction activity would occur within the ROW of the linear facilities throughout the corridor.

Structures in the Phased Build Alternative would be located further from the edge of the ROW compared to the Proposed Project. In these locations, the severity of the substantial adverse noise effect for the nearest sensitive receptors would be reduced. The level of construction noise attenuates with increased distance from the source. For the new and existing structures that would be further from the edge of the ROW than the Proposed Project structures that they would be replacing, noise levels would decrease at the nearest sensitive receptors proportionally. These decreases in construction noise levels would reduce the severity of this adverse effect for noise. However, noise levels for construction of the new structures in this alternative would remain above 55 dBA or above the level that would avoid interfering with outdoor activities. During the construction timeframe for this alternative, ambient noise levels would be increased by more than 5 dBA Leq, which represents a substantial adverse effect. This alternative would decrease noise levels for several sensitive receptors, and would decrease overall noise levels due to the reduction in construction activity.

For residential areas, schools, hospitals, and outdoor recreation areas within 1,400 feet, the resulting noise levels would substantially disturb sensitive receptors during construction activity. Additionally, the noise of helicopter overflights and work during the nighttime or outside normal work hours would not only exceed ambient levels but also would be likely to create violations of local standards. Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) are recommended as a means of reducing the adverse effects of temporary construction noise.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit. The highest levels of vibration would be caused by a typical large bulldozer or by caisson drilling with an auger for the concrete footings of structures.

Vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, impact pile driving for installing retaining walls, and drilling or rock blasting for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. The impact results in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site.

Installing towers could cause vibration levels that could cause some persons to become annoyed, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. Project-related vibration would not occur at levels that could cause any structural damage. Impacts from vibrations would be temporary (e.g., no more than two or three days at each site) and localized and, therefore, would not be excessive.

As for the Proposed Project, vibration from construction equipment and activities in the Phased Build Alternative would be perceptible to people in the immediate vicinity of construction activities. This adverse effect would be slightly reduced in comparison with the Proposed Project, due to the reduced amount of construction required.

Like the Tower Relocation Alternative, some structures in this alternative would be located further from the edge of the ROW compared to the Proposed Project structures. In these locations, the severity of adverse groundborne vibration due to construction of those towers for the nearest sensitive receptors would be reduced.

The Phased Build Alternative would ensure that sensitive receptors near to new structures are not adversely affected by groundborne vibration by moving construction activity more than 50 feet away from the nearest sensitive receptors. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. However, even with the reduced construction activity and the increased distance between new structures and the edge of the ROW, the use of heavy construction equipment and temporary disturbance activities (such as during grading or for installing retaining walls) would remain an adverse effect for locations closer than 150 feet to sensitive receptors. Construction-related vibration in this alternative would not occur at levels that would cause any structural damage. Adverse effects from vibrations would be temporary and localized and, therefore, would not be excessive.

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

The WOD Upgrade project would introduce long-term sources of noise related to the audible corona effect of the 220 kV lines, which occurs with normal and routine operation. Project transmission line corona noise would occur in the same corridor as the existing 220 kV system, where the typical level with wet conductors is about 40 dBA, and Proposed Project noise would be of the same nature. The project would not introduce any new notable noise source at project substations, subtransmission lines, and telecommunications facilities, and the 66 kV subtransmission lines would not be a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions.

The addition of the upgraded 220 kV transmission lines would change the corona noise levels along all portions of the corridor. Along the corridor, except in Segment 2, SCE expects the upgraded 220 kV lines to cause a maximum of 36.9 dBA Leq at the edge of the ROW under heavy rain conditions and 33.4 dBA during high humidity or normal rain; in Segment 2, the maximum would be 34.9 dBA Leq under heavy rain conditions and 31.4 dBA during high humidity or normal rain (SCE, 2013; SCE, 2014a). During a heavy rain, the sound of rain on surfaces would generally be greater than the worst-case corona noise.

The highest corona noise levels would comply with all local ordinances including the City of Calimesa requirement that public utility facilities cause no more than 50 dBA Leq continuous over 24 hours. Corona noise levels could decrease along the edges of the existing 220 kV transmission lines where the proposed reconfiguration of the transmission structures causes lines to be further from receptors than in the existing conditions.

Corona noise during high humidity, fog, or rain would exceed ambient fair weather corona noise levels, with the greatest potential for impact during nighttime hours when ambient noise levels are lowest. During heavy rain and the most-quiet nighttime hours, the increase over short-term minimum noise levels (Lmin) could be as great as 10 dBA, which would be a substantial difference of more than five dBA. However, the difference would not be substantial over a 24-hour period when daytime ambient levels are higher. For all locations, permanent day-night or 24-hour noise levels (Ldn or CNEL) would not substantially increase due to corona noise for any segment of the Proposed Project.

The potential for corona discharges with the Phased Build Alternative are likely greater than those expected with the Proposed Project due to the conductor surface gradient (see Section D.21, Electrical Interference and Safety), but the conductors as a source of audible corona noise would be further from the edge of the ROW under the Phased Build Alternative. Like the Tower Relocation Alternative, some structures in this alternative would be located further from the edge of the ROW compared to the Proposed Project. In these locations, the severity of the operational adverse noise effect due to corona noise for the nearest sensitive receptors would be reduced. For sensitive receptors nearest to the new and existing structures in this alternative, the corona noise would be reduced proportionally compared to the Proposed Project.

Corona noise levels at the edge of the ROW would be less than those of the Proposed Project. For all locations, permanent day-night or 24-hour noise levels (Ldn or CNEL) would not substantially increase due to corona noise for any segment of the Phased Build Alternative.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

SCE proposes to accomplish normal and routine operation of the lines through SCE control systems based remotely and manually along the corridors and at substations, as required. As in the existing conditions, SCE would inspect the transmission, subtransmission, telecommunications, and distribution overhead facilities at least once per year via ground and/or aerial observation. Maintenance would occur as needed and could include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and structures, tree trimming, brush and weed control, and access road maintenance. Each of these activities normally requires daytime use of crew trucks with occasional short-term assistance via helicopter (SCE, 2013).

High-capacity conductors would be installed on a combination of new and existing 220 kV structures. The adjustment to the location of these structures compared to the Proposed Project would not alter operational noise levels from inspection and maintenance activities. The operation-related activities would not be notably different from those activities for the existing facilities or for the Proposed Project facilities and the noise from those temporary but recurring activities would not be notably different. The occasional nature of such continued maintenance activities in this alternative ensures that permanent ambient noise levels would not be adversely affected.

D.13.5 Environmental Impacts of No Action Alternative

D.13.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

No Action Alternative Transmission Lines and Beaumont Substation. Noise is a concern to nearby sensitive receptors, land uses such as residences, school, nursing homes, parks and hospitals. The No Action Alternative Option 1 alignment and the Beaumont Substation are largely in rural or remote settings, but a few sections of the transmission line pass near residential communities like Cabazon, which are sensitive receptors. The route also passes through noise-sensitive natural and wilderness areas, where quiet is an expectation for visitors.

Compliance with noise ordinances and conditions imposed by agencies having land use jurisdiction would help ensure that this impact is addressed to the extent feasible. In areas of sensitivity, time-of-day restrictions on construction would help alleviated impacts. Use of heavy equipment and helicopters is inherently noisy, but the impacts are of relatively short duration, occurring only during active construction and not constantly. For the Devers to Valley alignment, the DPV2 EIR/EIS identified that increased corona noise from operation of transmission lines would be a significant and unavoidable impact. It is expected that the same would apply to the substation and the lines to El Casco; the impact would apply where sensitive receptors are nearby.

D.13.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. High levels of noise associated with construction of this No Action Alternative Option 2 could disturb nearby sensitive receptors, including residential areas, schools, hospitals, day care centers, campgrounds, and other outdoor recreation areas. Areas that are particularly sensitive to increases in noise levels include the Lake Mathews-Estelle Mountain reserve and the Cleveland National Forest. The same as for the Proposed Project, construction of this alternative would involve the use of heavy equipment, such as bulldozers, cranes, and drilling rigs. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction activity would occur within and adjacent to the ROW, but construction noise would exceed ambient noise levels and could violate local noise standards for nearby receptors. In noise-sensitive areas, time-of-day restrictions on construction would further reduce adverse noise effects. The use of heavy equipment and helicopters is inherently noisy, but the impacts would be temporary, short-term, and dispersed along the length of the approximately 40-mile corridor during the construction period. Therefore, it is unlikely that sensitive receptors would be exposed to excessive noise levels for an extended period of time.

Operational noise levels would be increased due to corona noise from the new 500 kV circuit, but the increase in operational noise would not substantially exceed existing noise levels because the existing 500 kV transmission line produces similar levels of operational noise.

D.13.6 Mitigation Monitoring, Compliance, and Reporting

Table D.13-9 presents the mitigation monitoring program for noise.

Table D.13-9. Mitigation Monitoring Program – Noise

MITIGATION MEASURE	**N-1a: Implement best management practices for construction noise.** SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors and to avoid possible violations of local rules, standards, and ordinances during construction: ▪ Construction noise shall be confined to daytime, weekday hours (7:00 a.m. to 6:00 p.m.) or an alternative schedule established by the local jurisdiction. ▪ Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. ▪ Stationary noise sources (e.g., generators, pumps) at staging areas and on the ROW within 1,4000 feet of sensitive receptors shall be shielded at the source to the extent feasible. Examples of feasible shielding may include an enclosure, temporary sound walls, or acoustic blankets. For best performance, sound walls or acoustic blankets shall have a height of no less than 8 feet, a Sound Transmission Class (STC) of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts. ▪ Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible. ▪ Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, its engine should be shut off.
Location	Construction activity in all segments.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE implements construction noise management practices.
Effectiveness Criteria	Noise-sensitive receptors are not subject to unnecessary noise or noise in violation of local rules, standards, or ordinances.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office.
Timing	During all phases of construction.
MITIGATION MEASURE	**N-1b: Implement a helicopter noise control strategy.** As part of the final Helicopter Use Plan, SCE shall include a helicopter noise control strategy that identifies the established helicopter flight corridors and minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground. The noise control strategy shall prohibit helicopter hovering (greater than 15 minutes) within 250 feet of residences in any vertical or horizontal direction.
Location	Construction activity involving helicopter use.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits a final Helicopter Use Plan with a noise control strategy.
Effectiveness Criteria	Noise-sensitive receptors are avoided.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office.
Timing	Forty-five days prior to construction and during all phases of construction.

D.13.7 References

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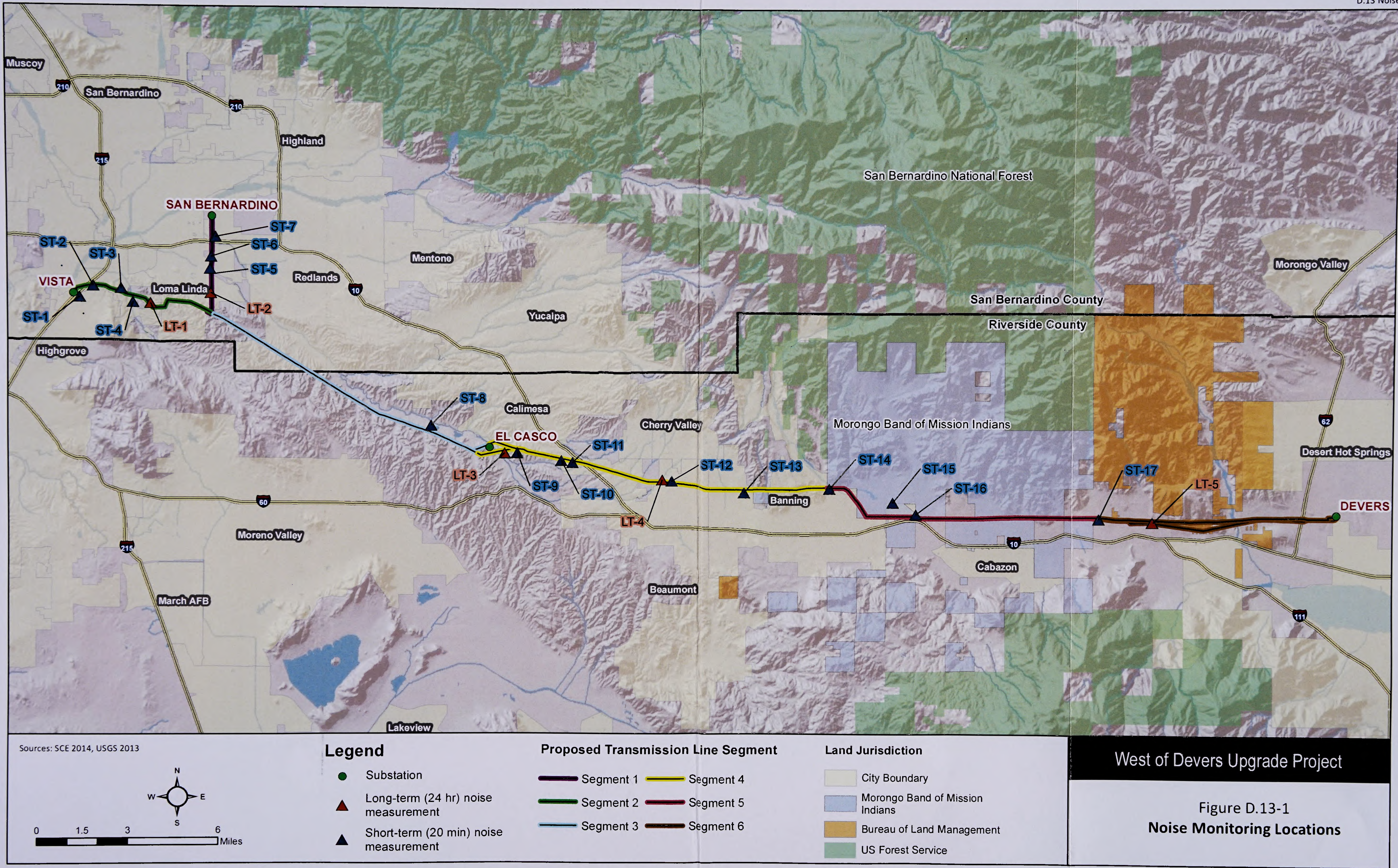

Figure D.13-1
Noise Monitoring Locations

July 2016

D.14 Paleontological Resources

This section provides contextual information on the Paleontological Resources located within the Proposed Project area and analyzes the potential impacts that project-related ground-disturbing activities may have on those resources. In addition, appropriate measures to avoid or reduce significant impacts on paleontological resources are identified. The information presented in this section is largely based on a paleontological resources assessment and survey of the Proposed Project area conducted by Paleo Solutions, Inc. (2013).

The affected environment for paleontological resources is described in Section D.14.1 and relevant regulations and standards are presented in Section D.14.2. Impacts and significance criteria of the Proposed Project and the alternatives are described in Sections D.14.3 through D.14.5. Section D.14.6 presents the mitigation measures and mitigation monitoring requirements, and Section D.14.7 lists references cited.

D.14.1 Environmental Setting / Affected Environment

The study area encompasses the northern Peninsular Ranges, the southeastern Transverse Ranges, and the westernmost portions of the Colorado Desert geomorphic provinces of California. The Peninsular Ranges are composed of a northwest-southwest oriented complex of blocks separated by similarly trending faults that extend approximately 125 miles from the Los Angeles Basin to the tip of Baja California (Norris and Webb, 1990). The Peninsular Ranges are bounded on the east by the Elsinore fault zone and the Colorado Desert and on the west by the Pacific Coast (Morton and Miller, 2006). The geology in the northern reaches of the range, including the San Jacinto Mountains, consists of Paleozoic banded gneiss, schist, and other older metamorphic rocks; Mesozoic granitic rocks of the southern California batholith; and Cenozoic marine, terrestrial, and Quaternary alluvium deposits. The highest point in the range is San Jacinto Peak at 10,805 feet (ft) above mean sea level (amsl) (Norris and Webb, 1990).

The San Bernardino Mountains rise 11,502 ft amsl at the highest peak and extend 65 miles from the Cajon Pass and the San Andreas fault on the west and southwest, to Twentynine Palms and the Morongo Valley in the east and southeast (Norris and Webb, 1990). The San Bernardino Mountains, are part of the Transverse Ranges, which extend 325 miles west-east from the Santa Ynez Mountains in Santa Barbara County, to the San Gabriel Mountains in Los Angeles County, and to the San Bernardino Mountains in San Bernardino County (Norris and Webb, 1990). The San Bernardino Mountains began forming 2 to 3 million years ago (Ma) due to uplift of the structural block(s) that are bounded on the north by a system of reverse faults and to the south by the San Andreas fault system, which forms the western border of the mountain range (Miller, 1987; Spotila et al., 2008; Wallace, 1990). The geology of the San Bernardino Mountains consists of Mesozoic and Cretaceous quartz monzonite and granitic rocks overlain by Late Cenozoic sedimentary deposits, with local exposures of fossiliferous Precambrian and Paleozoic limestone and quartzite. Faults of the region are predominantly right-lateral strike-slip faults, including the San Andreas, San Jacinto, and Elsinore fault zones.

The Proposed Project area extends east to the Coachella Valley within the westernmost portions of the Colorado Desert (Dibblee and Minch, 2004c). The Colorado Desert is a low-lying geomorphic region that extends from the Mojave Desert to the north, the Colorado River on the east, the Peninsular Ranges on the west, and south into Mexico. The Coachella Valley is located north of the Imperial Valley, within the Salton Trough; a large structural depression that extends from the San Gorgonio Pass in the north to the Gulf of Mexico in the south (Norris and Webb, 1990).

D.14.1.1 Regional Setting and Approach to Data Collection

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the geologic record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). In general, fossils are considered to be greater than 5,000 years old (Middle Holocene) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (SVP, 2010). Paleontological resources can provide important taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, or biochronological data (Scott and Springer, 2003).

Data Collection Methodology

Paleontological resources are not found in soil but are contained within the geologic deposits or bedrock that underlies the soil layer. Therefore, in order to ascertain whether or not a particular study area has the potential to contain significant fossil resources at the subsurface, it is necessary to review relevant scientific literature and geologic mapping to determine the geology and stratigraphy of the area. Further, to delineate the boundaries of an area of paleontological sensitivity, it is necessary to determine the extent of the entire geologic unit because paleontological sensitivity is not limited to surface exposures of fossil material.

To determine whether fossil localities have been previously discovered within the Proposed Project area or within a particular rock unit, a search of pertinent local and regional museum repositories was performed. In addition, relevant scientific literature and published geologic maps were reviewed, and a pre-construction paleontological reconnaissance survey was conducted by PaleoSolutions in 2013.

Geologic units underlying the Proposed Project were identified using the following published maps:

- Geologic map of the Beaumont quadrangle, Riverside County, California 1:24,000 (Dibblee and Minch, 2003a)
- Geologic map of the El Casco quadrangle, Riverside County, California 1:24,000 (Dibblee and Minch, 2003b)
- Geologic map of the Cabazon quadrangle, Riverside County, California 1:24,000 (Dibblee and Minch, 2004a)
- Geologic map of the Desert Hot Springs quadrangle, Riverside County, California 1:24,000 (Dibblee and Minch, 2004b)
- Geologic map of the Whitewater quadrangle, Riverside County, California 1:24,000 (Dibblee and Minch, 2004c)
- Geologic map of the San Bernardino and Santa Ana 30' x 60' quadrangles, California 1:100,000 (Morton and Miller, 2006)

For the Proposed Project, paleontological collections records searches were conducted at the following museum repositories:

- The San Bernardino County Museum (SBCM), Division of Geological Sciences, Regional Paleontological Locality Inventory
- The Los Angeles County Museum of Natural History (LACM), Vertebrate Paleontology Section

A detailed review of museum collections records was performed for the purposes of determining whether any museum fossil localities occur within or adjacent to the Proposed Project, and ascertain the abundance and taxonomic diversity of fossils collected from the same geologic formations elsewhere in this part of the San Bernardino and Riverside Counties. This led to identification of the units underlying the Proposed Project area and a determination of the paleontological sensitivity ratings of those geologic units in order to assess the Proposed Project's potential impacts to nonrenewable paleontological resources.

Areas of Direct Impact

The areas of direct impacts for paleontological resources is defined as all areas that would be subject to ground disturbing activity associated with development of the Proposed Project. This includes all proposed tower locations, access roads, staging yards, pull sites, substations, subtransmission lines, and telecommunications lines.

This analysis used the Bureau of Land Management's (BLM) Potential Fossil Yield Classification (PFYC) as the criteria for establishing the paleontological sensitivity of a given geologic unit within the area(s) of direct impact. The PFYC is generally only used on Federal lands, but for consistency, the classifications were applied to all geologic units with the Proposed Project area. The PFYC sensitivity guidelines are provided below, as excerpted from BLM IM 2008-009 (2007):

- **Class 1 – Very Low.** Typically, these are igneous or high-grade metamorphic geologic units, which are not likely to contain recognizable fossil remains due to the high heat and/or pressure of their formation.
- **Class 2 – Low.** Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils because the deposits are generally younger than 10,000 years before present, are aeolian deposits, exhibit significant diagenetic alteration,[1] or are known to lack or have only rare significant fossils.
- **Class 3 – Moderate or Unknown.** Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.
- **Class 4 – High.** Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface-disturbing activities may adversely affect paleontological resources in many cases.
- **Class 5 – Very High.** Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation.

Findings Summary

The results of the paleontological resources records searches revealed 8 previously recorded fossil localities within the Proposed Project area and at least 50 additional fossil localities within approximately 1 mile of the Proposed Project area. In addition, the paleontological field reconnaissance survey identified 12 additional fossil localities in the vicinity of the Proposed Project area. All previously recorded localities are in the highly sensitive San Timoteo Formation and the moderately sensitive Quaternary Older Alluvium within or near Sections 2, 3, and 4. Table D.14-1 summarizes the geologic units within the Proposed Project area and their PFYC (paleontological sensitivity), which ranges from very low to very high (Classes 1-5).

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[1] The process of chemical and physical change in deposited sediment during its conversion to rock.

Table D.14-1. Paleontologically Sensitive Units Within the Proposed Project Area

Geologic Unit	Age	PFYC/Paleontological Sensitivity	Link
Granodiorite and Tonalite	Cretaceous	Class 1 – Very Low	Segment 2
Vesicular olivine basalt	Miocene	Class 1 – Very Low	Segment 6
Coachella Fanglomerate	Miocene	Class 3a/3b – Moderate/Unknown	Segment 5 to Segment 6
San Timoteo Formation	Pliocene – Pleistocene	Class 5 – Very high	Segment 1 to Segment 5
Quaternary very old sediments, including alluvial fan, axial channel, and regolith	Pleistocene	Class 3a – Moderate	Segment 2 to Segment 4
Quaternary older fan, alluvium/axial channel, and gravel deposits	Pleistocene	Class 3a – Moderate	Segment 2 to Segment 6
Quaternary younger alluvial and landslide units	Holocene	Class 2 – Low	Segment 1 to Segment 6

D.14.1.2 Environmental Setting by Segment

This section discusses the geologic and depositional history of the rock formations that underlie each segment of the Proposed Project area and provides an overview of their paleontological sensitivity. The geologic descriptions and paleontological resources potential ratings are after Albright (1999), Dibblee (2003a, 2003b, 2004a, 2004b, 2004c), McLeod (2011, 2013), PaleoSolutions (2013), and Scott (2012).

D.14.1.2.1 Segment 1: San Bernardino

Segment 1 of the Proposed Project extends approximately 3.5 miles from the southern San Bernardino basin near the Santa Ana River, to the northern foothills of the San Timoteo Badlands and San Timoteo Creek, within San Bernardino County (Albright, 1999). In addition to the proposed temporary disturbance areas and access roads along the existing SCE ROW, Segment 1 includes staging yards, telecommunication lines, distribution lines, subtransmission lines, and the San Bernardino and Timoteo Substations.

The San Bernardino segment is primarily underlain by low-sensitivity Quaternary alluvial deposits within the San Bernardino Basin, with subordinate exposures of the very highly sensitive San Timoteo Formation in the foothills of the San Timoteo Badlands; an area characterized by gently rolling hills, steep canyons, and erosive washes (Morton and Miller, 2006). The badland topography is a result of extensive gully erosion within a thick accumulation (9,000 ft) of Miocene to Pleistocene non-marine sediments (Albright, 1999; Hehn, 1996). The sediment within the San Timoteo Badlands consists of the Mount Eden Formation, the San Timoteo Formation and surficial Quaternary deposits derived from erosion of badlands and sedimentation along San Timoteo Creek (Morton and Miller, 2006). The San Timoteo Badlands are bounded on the west by the San Jacinto fault and on the east by San Timoteo Canyon, which contains San Timoteo Creek, a tributary of the Santa Ana River (USGS, 2012). The San Timoteo Badlands represent an important geological and paleontological resource because they record significant tectonic events associated with the San Jacinto and San Andreas Fault Zones and contain a continuous exposure of non-marine deposits from the Miocene to the Middle Pleistocene (Albright, 1999).

San Timoteo Formation

The San Timoteo Formation was named by Frick (1921) after its type locality in San Timoteo Canyon in the vicinity of the Proposed Project area (Morton and Miller, 2006). According to magnetostratigraphic studies by Albright (1999), coupled with the published ages of recovered vertebrate fossils, the lithologically diverse sandstone of the San Timoteo Formation was likely deposited between 4.3 to 0.7 Ma, during the Pliocene to Middle Pleistocene. The geologic unit is nearly 6,000 ft thick locally, and is exposed for approximately 20 miles along the San Jacinto fault.

The San Timoteo Formation consists of a basal deposit of dark gray-green, fissile mudrock and interbedded pale brown sandstone. The pale-brown sandstone is a fine- to medium-grained, well sorted, well-bedded deposit that is well indurated and displays climbing ripples, convolute bedding, and crossbed structures (Albright, 1999; Morton and Miller, 2006). The overlying majority of the San Timoteo Formation consists of well bedded, fine- to coarse-grained, moderately to poorly indurated and sorted, tan-brown to gray-yellow lithic arkose with subordinate pebble and cobble conglomerate deposits composed of subangular to subrounded lithics. The localized conglomerate is deposited in thin lenses and thick horizontal beds up to 30 ft thick. According to Morton and Miller (2006), the lithology includes "common reddish-brown stratigraphic intervals consisting of oxidized sandstone, which are not paleosols,[2] and reddish-brown clay-rich intervals, which may be paleosols." The Upper member is predominantly composed of medium-grained arkose; the Middle member consists of approximately 70 percent arkose and 30 percent conglomerate; and the Lower member is characterized by fine-grained gray sandstone with thin pebble conglomerate lenses (Albright, 1999; Morton and Miller, 2006). According to Albright (1999), the lithology of the San Timoteo Formation is consistent with an ephemeral braided stream environment.

Paleontology of the San Timoteo Formation. The San Timoteo Formation has yielded an abundant and diverse fauna that includes at least 30 mammalian and reptilian species. More than 1,700 fossils have been recovered from the deposits, including at least 1,450 specimens recovered during excavations related to the construction of SCE's El Casco Substation near Calimesa, California (LSA, 2012). Over 75 taxa have been recovered, including plants, mollusks, fish, amphibians, reptiles, birds, insectivores, rodents, deer, camels, horses, sloths and two different saber cats (Albright, 1999b).

Two local faunas have been described from within the San Timoteo Formation and include the El Casco Local Fauna [LF] (Late Blancan/Irvingtonian North American Land Mammal Age [NALMA]) and Shutt Ranch LF (Irvingtonian NALMA) (Albright, 1999; Woodburne, 2013). The fossils recovered from within the San Timoteo Formation are important because they not only provide a more complete fossil record for a tectonically active California during the Late Cenozoic, they constrain dates and assist with magneto-stratigraphy, paleogeography, paleoclimate reconstructions, and timing of pre-historic faunal migrations (e.g., immigration through the Bering Strait and the Isthmus of Panama) (Albright, 1999).

The El Casco LF is estimated between 1.4 Ma and 1.2 Ma in age and consists of approximately 15 taxa recovered from within the Lower member that include species of cottontail rabbit, pack rat, kangaroo rat, deer mouse, pocket mouse, vole, lemming, dog, rhinoceros, numerous artiodactyls as well as mollusks, lizards, and a snake (Albright, 1999; Repenning, 1987). All of the Shutt Ranch LF is between 1 Ma and 0.78 Ma and is contained in one locality in the Upper Member of the San Timoteo Formation. The Shutt Ranch LF is represented by rodent taxa, including species of vole and pack rat. In addition to the El Casco LF and Shutt LF, fossils from more than 20 mammal species have been recovered from within the Lower member of the San Timoteo Formation (Albright, 1999). These include horse, rabbit, rodent, and new species of *Baiomys* and *Peromyscus* (Blancan). Further, a *Mammuthus* tooth was recovered from the Upper member (Irvington) (Albright, 1999). Moreover, during his initial investigation of the San Timoteo Badlands, Frick (1921) discovered 17 localities from within the San Timoteo Formation that yielded specimens from six different species, including deer, camel, ground sloth, horse, and turtle. Frick's (1921) fossils were recovered within deposits later identified by Morton and Miller (2006) as the Middle member of the San Timoteo Formation. The San Timoteo Formation has consistently yielded scientifically important fossils and has been determined to have a very high potential for paleontological resources (PFYC Class 5).

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[2] A paleosol is a fossil soil preserved within a sequence of geological deposits, indicative of past conditions.

Quaternary Sedimentary Deposits

Quaternary younger and very young sedimentary deposits underlie the western portions of Segment 2. Holocene age alluvial deposits are typically too young to contain fossilized remains and have low paleontological sensitivity (PFYC Class 2); however, they may shallowly overlie geologic units with higher paleontological sensitivity.

D.14.1.2.2 Segment 2: Colton and Loma Linda

Segment 2 extends approximately 5 miles from the San Jacinto basin across the San Jacinto Fault Zone, and into the northern foothills of the San Timoteo Badlands in San Bernardino County. In addition to the proposed temporary disturbance areas and access roads along the existing SCE ROW, Segment 2 includes the Vista Substation.

The western portion of Segment 2, from the Vista Substation to the vicinity of Barton Road, is underlain by Quaternary fan and alluvial deposits of Pleistocene to Holocene age, as well as local exposures of Cretaceous granodiorite and tonalite bedrock. This portion of the segment has been extensively disturbed by urban development. The eastern portion of Segment 2 is located in the San Timoteo Badlands and is underlain by the Pliocene-Pleistocene San Timoteo Formation. As described above, the San Timoteo Badlands and the San Bernardino Basin are located in a region that has been tectonically active since at least the Late Miocene, during which the right-lateral strike-slip San Gabriel-Banning fault was active and erosion of the Peninsular Range basement provided a clast source for the non-marine San Timoteo deposits (Albright, 1999). Later, during the Pliocene and Pleistocene, the San Gabriel fault activated and the provenance for the San Timoteo Badlands shifted to the ancestral San Gabriel Mountains in the Transverse Ranges. As a result of the local faulting and regional tectonic activity, the deposits in the San Timoteo badlands are exposed in an anticline that trends northwest along the southwestern edge of the badlands and dips gently to the northeast (Hehn, 1996).

Cretaceous Granodiorite and Tonalite

Cretaceous (145 to 66 Ma) age plutonic igneous bedrock is exposed within the central portion of Segment 2. Plutonic igneous rocks do not contain fossils due to their high heat of formation deep below the surface of the Earth; therefore, this unit has a very low paleontological sensitivity (PFYC Class 1).

San Timoteo Formation

The San Timoteo Formation is described above under "Segment 1: San Bernardino" and is determined to have a very high potential for paleontological resources (PFYC Class 5). In addition to the paleontological resources described above, the paleontological field reconnaissance survey yielded a vertebrate locality near Segment 2 (see Table D.14-2).

Table D.14-2. Paleontological Localities in the San Timoteo Formation Within or Near Segment 2

Geologic Formation	Locality Number	Taxa
San Timoteo	20130306MER.01	Unspecified vertebrates

Source: Paleo Solutions (2013)

Quaternary Older and Very Old Sedimentary Deposits

Quaternary older and very old sedimentary deposits underlie portions of Segment 2. These units typically display soil development and moderate dissection, and are composed of unconsolidated to moderately indurated coarse sand to fine sand, silt, and gravel (Morton and Miller, 2006). Although there are no previously recorded vertebrate fossil localities reported directly within the Segment 2 boundaries, similar Pleistocene age alluvial, fluvial and lacustrine deposits have proven to yield scientifically significant paleontological resources in the vicinity of the Proposed Project area, (Albright, 1999; Springer et al., 1999). Southwest of the Proposed Project area, in the vicinity of Lakeview, a diverse assemblage of fossil resources have been recovered including *Mammuthus* (mammoth), *Smilodon* (sabre-toothed cat), *Equus* (extinct horse), cf. *Bison antiquus* (bison), and numerous small mammals, reptiles, invertebrates, and plant remains (Springer et al., 2009). These Quaternary alluvial units of Early to Late Pleistocene age have been determined to have moderate paleontological sensitivity (PFYC Class 3a).

Quaternary Sedimentary Deposits

Quaternary sedimentary deposits are described above under "Segment 1: San Bernardino." Holocene age alluvial deposits are typically too young to contain fossilized remains and have low paleontological sensitivity (PFYC Class 2); however, they may shallowly overlie geologic units with higher paleontological sensitivity.

D.14.1.2.3 Segment 3: San Timoteo Canyon

Segment 3 extends approximately 10 miles through San Bernardino and Riverside Counties, within the San Timoteo Badlands; a region described in detail under Segments 1 and Segment 2 above. The northern border of Segment 3 is generally bound by the east-west trending San Timoteo Creek within San Timoteo Canyon. In addition to the proposed temporary disturbance areas and access roads along the existing SCE ROW, Segment 3 includes staging yards, telecommunication lines, and the El Casco Substation. The majority of Segment 3 is underlain by the very highly sensitive San Timoteo Formation, with subordinate Early Pleistocene to Holocene alluvium and landslide deposits within the washes, canyons, and gullies. Road cuts and steep canyon walls within Segment 3 expose the characteristic dipping beds of the folded and faulted San Timoteo Formation (Albright, 1999).

San Timoteo Formation

The San Timoteo Formation is described above under Segment 1 and is determined to have a very high potential for paleontological resources (PFYC Class 5). In addition to the paleontological resources described above, museum paleontological collections records maintained by the SBCM and LACM yielded four previously recorded vertebrate fossil localities from within the San Timoteo Formation within the Proposed Project area; an additional 35 vertebrate localities were recorded nearby. Furthermore, the paleontological field reconnaissance survey identified seven more vertebrate localities near Segment 3 (see Table D.14-3).

Table D.14-3. Paleontological Localities in the San Timoteo Formation Within or Near Segment 3

Geologic Formation	Locality Number	Taxa
San Timoteo Formation	LACM (CIT) 133, 155; and LACM 7618-7622	*Equus* and Camelidae
San Timoteo Formation	SBCM 5.35, 5.340-5.341, and 5.3.257*	*Equus* and Camelidae
San Timoteo Formation	SBCM 5.3.34–5.3.38, 5.3.40–5.3.41, 5.3.52–5.3.53, 5.3.112, 5.3.114, 5.3.160–5.3.165, 5.3.228–5.3.245, and 5.3.257–5.3.269	Anura, cf. Phrynosoma, cf. Masticophis, Crotalus, Callipepla, Zenedia asiatica, Icteridae, Corvidae, Mammut americanum, Mammuthus, Soricidae, Sylvilagus, Lepus, Spermophilus, Thomomys bottae, cf. T. gidleyi, Dipodomys, Prodipodomy Perognathus, Peromyscus, Microtus, Neotoma, Equus, Hemiauchenia, Odocoileus

Table D.14-3. Paleontological Localities in the San Timoteo Formation Within or Near Segment 3

Geologic Formation	Locality Number	Taxa
San Timoteo Formation	20130310MER.01, 20130311MER.01,20130319MER.02, 20130319MER.04, 20130319MER.06, 20130325MER.01, 20130325JTR.01	*Antilocapra*, *Equus* and other unspecified mammals

Source: McLeod (2011, 2013); Paleo Solutions (2013); and Scott (2003, 2012)
*Localities are within the Proposed Project area.

Quaternary Older and Very Old Sedimentary Deposits

Quaternary older sedimentary deposits are described above in Section D.14.1.2.2 (Segment 2: Colton and Loma Linda). Early to late Pleistocene age alluvium has been determined to have a moderate paleontological sensitivity (PFYC Class 3a).

Quaternary Sedimentary Deposits

Quaternary sedimentary deposits are described above in Section D.14.1.2.1 (Segment 1: San Bernardino). Younger, Holocene age alluvial deposits are typically too young to contain fossilized remains and have low paleontological sensitivity (PFYC Class 2); however, they may shallowly overlie geologic units with higher paleontological sensitivity.

D.14.1.2.4 Segment 4: Beaumont and Banning

Segment 4 extends 12 miles from the San Timoteo Badlands towards the western slopes of the San Gorgonio Pass in Riverside County. The San Gorgonio Pass is an east-west trending lowland between the San Bernardino Mountains of the Transverse Ranges on the north, and the San Jacinto Mountains of the Peninsular Ranges on the south. The mountain pass is a geologically complex area, due to the interaction of the San Andreas Fault Zone with other faults, including the Banning Fault Zone and the Pinto Mountain Fault (SCEDC, 2013). Segment 4 is underlain by the San Timoteo Formation, Quaternary very old and older alluvium, and Quaternary younger alluvium. Significant portions of the segment have been previously disturbed by urban development (Morton, 1999). In addition to the proposed temporary disturbance areas and access roads along the existing SCE ROW, Segment 4 includes proposed telecommunication lines.

San Timoteo Formation

The San Timoteo Formation is described above in D.14.1.2.1 (Segment 1: San Bernardino) and is determined to have a very high potential for paleontological resources (PFYC Class 5). In addition to the paleontological resources described above, the paleontological field reconnaissance survey identified four additional localities near Segment 4 (see Table D.14-4).

Quaternary Older and Very Old Sedimentary Deposits

In addition to the lithology and paleontology described above in D.14.1.2.2 (Segment 2: Colton and Loma Linda), LACM records indicate that Quaternary older alluvium deposits yielded one paleontological locality within the Segment 4 boundaries (McLeod, 2011, 2013). Locality LACM 4540 yielded vertebrate fossil remains of Equidae[3] near the intersection of Gilman Springs Road and Jack Rabbit Trail, along the southern

[3] Equidae is the taxonomic family of horses and related animals.

margin of the San Timoteo Badlands, approximately 5 miles south of Segment 4. These Quaternary alluvial units of early to late Pleistocene age have been determined to have moderate paleontological sensitivity (PFYC Class 3a).

Table D.14-4. Paleontological Localities in the San Timoteo Formation and Quaternary Older Alluvium Within or Near Segment 4

Geologic Formation or Unit	Locality Number	Taxa
Quaternary Older Alluvium	LACM 4540	Equidae
San Timoteo Formation	20130311JTR.01, 20130319MER.01, 20130319MER.03, 20130319MER.05	*Thomomys*, rodent, and unspecified mammals

Source: McLeod (2011, 2013); and Paleo Solutions (2013).

Quaternary Sedimentary Deposits

Quaternary sedimentary deposits are described above in D.14.1.2.1 (Segment 1: San Bernardino). Younger, Holocene age alluvial deposits are typically too young to contain fossilized remains and have low paleontological sensitivity (PFYC Class 2); however, they may shallowly overlie geologic units with higher paleontological sensitivity.

D.14.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

The majority of Segment 5 is located within the Morongo Tribal Lands on the San Gorgonio Pass in Riverside County. Segment 5 is approximately 9 miles long and includes staging yards, telecommunication lines, proposed transmission line ROWs, and the Banning Substation, in addition to the proposed temporary disturbance areas and access roads along the existing SCE ROW. The lithology in the Segment 5 is dominated by low- to moderately sensitive older and younger Quaternary alluvial fan deposits, the moderately sensitive Coachella Fanglomerate, and the highly sensitive San Timoteo Formation (Dibblee, 2004a; Morton, 1999).

Coachella Fanglomerate

The Coachella Fanglomerate of early Miocene age was first named and described by Vaughan (1922) as a thick alluvial unit with a basal breccia derived from the San Bernardino Mountains to the north. No fossils have been reported within this unit; however, during the paleontological reconnaissance survey for this project, numerous paleosols and root casts were observed within this formation in finer beds. These conditions illustrate the possibility that fossils may be found in this unit. As a result, these deposits are determined to have a Moderate/Unknown PFYC ranking (PFYC Class 3a/3b) (Dibblee, 2004a).

San Timoteo Formation

The San Timoteo Formation is described above in D.14.1.2.1 (Segment 1: San Bernardino) and is determined to have a very high potential for paleontological resources (PFYC Class 5).

Quaternary Older Sedimentary Deposits

In addition to Quaternary older sedimentary deposits described above under Segment 2: Colton and Loma Linda, portions of Segment 5 are also underlain by the middle Pleistocene age alluvial fan deposits informally known as the Cabazon Fanglomerate (Dibblee, 2004a, 2004b, 2004c). Middle to late Pleistocene age alluvium has been determined to have a moderate paleontological sensitivity (PFYC Class 3a).

Quaternary Sedimentary Deposits

Quaternary sedimentary deposits are described above in D.14.1.2.1 (Segment 1: San Bernardino). Younger, Holocene age alluvial deposits are typically too young to contain fossilized remains and have low paleontological sensitivity (PFYC Class 2); however, they may shallowly overlie geologic units with higher paleontological sensitivity.

D.14.1.2.6 Segment 6: Whitewater and Devers

Segment 6 extends 8 miles from the eastern side of the San Gorgonio Pass into the northwestern Coachella Valley within Riverside County. The Coachella Valley is located within the Colorado Desert geologic province of California (Dibblee and Minch, 2004b; Norris and Webb, 1990). The Colorado Desert is a low-lying geomorphic region that extends from the Mojave Desert to the north, the Colorado River on the east, the Peninsular Ranges on the west, and south into Mexico. The majority of Segment 6 is underlain by low sensitivity Quaternary fan, gravel, and alluvial deposits, as well as deposits of the Coachella Fanglomerate and the San Timoteo Formation. In addition to the proposed temporary disturbance areas and access roads along the existing SCE ROW, Segment 6 includes staging yards and the Devers Substation.

Vesicular Olivine Basalt

Miocene age basalt is restricted to a small area in the vicinity of Banning, adjacent to both the San Timoteo Formation and the Coachella Fanglomerate. Basalt is a volcanic rock that has a PFYC ranking of 1 (very low) because it is was formed under high temperatures, which are unsuitable for the preservation of organic remains (Dibblee, 2004a).

Coachella Fanglomerate

The Coachella Fanglomerate is described above under Segment 5 and is determined to have a Moderate/Unknown PFYC ranking (PFYC Class 3a/3b).

Quaternary Older Sedimentary Deposits

In addition to the lithology and paleontology described above under Segment 2 and Segment 5, the Quaternary older alluvium in Segment 6 contains deposits characteristic of the Coachella Valley deposits. Pleistocene age units with the Coachella Valley in Segment 6 are dominated by alluvial fan sediments, with minor wash, alluvial, and eolian deposits. Middle to late Pleistocene age alluvium has been determined to have a moderate paleontological sensitivity (PFYC Class 3a).

Quaternary Sedimentary Deposits

Quaternary sedimentary deposits are described above under Segment 1. Younger, Holocene age alluvial deposits are typically too young to contain fossilized remains and have low paleontological sensitivity (PFYC Class 2); however, they may shallowly overlie geologic units with higher paleontological sensitivity.

D.14.1.3 Environmental Setting for Connected Actions

This section discusses the regional geologic setting for the connected actions for the Proposed Project and provides the general paleontological sensitivity for each geographic area. Section B.7 lists the connected actions for the project, including two known projects with interconnection agreements (Palen Solar Power Project and EDF Desert Harvest) and five confidential projects requesting interconnection. The specific locations of the confidential projects are unreported; however, it is known that they are planned for the general geographic areas of Desert Center and Blythe.

Desert Center Area. The regional geology and existing paleontological resources within the Desert Center area are summarized below, as derived from the Desert Harvest Solar Project EIS (BLM, 2012b).

Regional Geology. The Desert Center area is located in the Chuckwalla Valley within the transition zone between the Mojave and Colorado Deserts in Riverside County, California. The area is bordered to the north and northwest by Joshua Tree National Park and the Coxcomb and Eagle Mountains, to the east by the Palen Mountains, and to the south by the Chuckwalla Mountains. The Mojave Desert averages 2,500 ft amsl and extends from the San Andreas and Garlock Faults towards the Basin and Range Province and Colorado Desert in eastern California (Dibblee and Hewett, 1966). The Mojave Desert was formed as a result of Proterozoic and Paleozoic subsidence and sediment accumulation; Mesozoic volcanism, plutonic intrusion, regional uplift, and metamorphism; and ongoing Cenozoic uplift, depression, erosion, volcanism, and crustal deformation associated with faulting (Dibblee, 1967). The Colorado Desert shares a similar geologic history with the neighboring Mojave Desert, but is generally much lower in elevation. The Colorado Desert extends from the Mojave Desert to the north, the Colorado River on the east, the Peninsular Ranges on the west, and south into Mexico. Dominant features within the Colorado Desert include the Salton Trough, the Colorado River, the Orocopia Mountains, and the Chocolate Mountains (Norris and Webb, 1976). In general, the Mojave and Colorado Deserts are dominated by broad alluvial basins wherein sedimentary deposition has been controlled by the geography of uplifted and unroofed basement rock, late Cenozoic basaltic and rhyolitic volcanic activity, and Quaternary hydrological processes (Garfunkel, 1974).

Paleontological Resources. The Desert Center area is primarily underlain by Quaternary alluvial deposits with low paleontological sensitivity, Quaternary alluvial and playa deposits with moderate to high paleontological sensitivity, and Mesozoic granitic units with very low paleontological sensitivity. According to the BLM's (2012b) review of published literature and a museum records search at the Natural History Museum of Los Angeles County (LACM) and at the University of California Museum of Paleontology (UCMP), paleontological resources have not been previously recorded within in the Desert Center area; however, vertebrate fossil localities have been identified in the vicinity within the same or similar sedimentary deposits elsewhere. According to the BLM (2012b), the LACM reports the occurrence of at least three vertebrate localities in the immediate vicinity of the Desert Center area, which yielded fossil specimens of a *Perognothus* (pocket mouse), *Gopherus* (tortoise), *Equus* (horse), *Comelops*, o*nd Tonupolomo stevensi* (camel) from within older Quaternary deposits (BLM, 2012b). In addition, numerous paleontological vertebrate localities have been recorded during ground-disturbing activities associated with construction of several large energy projects in the region. For example, during construction of the Genesis Solar Energy project, paleontological monitors have found multiple vertebrate fossils, including a Pleistocene age tortoise carapace and bones. Further, during construction of the Desert Sunlight Solar Farm, paleontological monitors identified several significant Pleistocene age vertebrate fossils, including tortoise (*Gopherus*), horse (*Equus*), and camel.

Blythe Area. The regional geology and existing paleontological resources within the Blythe Area have been summarized below, as derived from the Blythe Mesa Solar Project EIR/EA (BLM and Riverside County, 2014).

Regional Geology. The Blythe area is near the California/Arizona border in the Colorado Desert, a geomorphic region described above for the Desert Center area. Specifically, the Blythe area is located in the Colorado River floodplain in the Palo Verde Valley. The area is bordered by Palo Verde Mesa to the west, Big Maria Mountains to the northwest, Palo Verde Mountains to the southwest, and Trigo and Dome Rock Mountains to the east. The surrounding mountains rise approximately 3,000 feet above Palo Verde Valley, averaging about 3,350 feet amsl. The Palo Verde Valley contains thick deposits of Quaternary age alluvial deposits derived from erosion of the surrounding mountains, as well as fluvial deposits that accumulated due to sedimentation along the Colorado River (BLM and Riverside County, 2014).

Paleontological Resources. The Blythe area is primarily underlain by Middle to Late Pleistocene age alluvial and fluvial deposits with moderate to high paleontological sensitivity, and Holocene alluvial and eolian deposits with low paleontological sensitivity. According to the BLM and Riverside County's (2014) review of published literature and museum records at the San Bernardino County Museum (SBCM) and UCMP, vertebrate fossils have been recovered from Pleistocene age alluvial deposits throughout the Colorado Desert region. The UCMP online database contains at least one record for an unspecified vertebrate of the Rancholabrean NALMA identified within Pleistocene age deposits near the Blythe area. In addition, Quaternary older alluvium elsewhere in the Colorado Desert, similar in age and lithology to the deposits in the Blythe area, have yielded significant fossils of extinct Ice Age mammals, including specimens of mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, large and small horses, large and small camels, and bison, as well as plant fossils.

D.14.2 Applicable Regulations, Plans, and Standards

Paleontological resources (i.e., fossils) are considered nonrenewable scientific resources because once destroyed, they cannot be replaced. As such, paleontological resources are afforded protection under the various federal, state, and local laws and regulations.

D.14.2.1 Federal

Federal protections for scientifically significant paleontological resources include the National Environmental Policy Act (NEPA) of 1969, the Antiquities Act of 1906, the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA) of 1969, the Federal Land Policy and Management Act (FLPMA) of 1976, and Title 43 of the Code of Federal Regulations, among others.

The Paleontological Resources Protection Act (PRPA). This law was recently enacted as a result of the passage of the Omnibus Public Lands Management Act of 2009. The PRPA requires federal land management agencies to manage and protect paleontological resources and affirms the authority of existing policies already in place (16 United States Code [U.S.C.] 470aaa et seq. [BLM, 2012]).

The National Environmental Policy Act of 1969. This law requires that all federal agencies "utilize a systematic, interdisciplinary approach" to make informed, publicly supported decisions regarding environmental issues (Section 102 [2] [A]). NEPA was enacted to promote "efforts which will prevent or eliminate damage to the environment…. and will preserve important historic, cultural, and natural aspects of our national heritage" (42 U.S.C. 4321 and 4331-4335 [National Park Service, 2013a]).

Antiquities Act of 1906. This law establishes a penalty for the unlawful appropriation, excavation, or injury to any "historic or prehistoric ruin or monument, or any object of antiquity" that is situated on federal lands or federally controlled lands (16 U.S.C. 431-433 [National Park Service, 2013b]).

The National Historic Preservation Act of 1966. This law provides leadership and financial and technical assistance to foster prehistoric and historic preservation of the resources of the United States and of the international community in partnership with States, Indian tribes, Native Hawaiians, and local governments. Specifically, the Section 106 of the NHPA is relevant because it provides for the survey, recovery, and preservation of paleontological resources when they are found in culturally related contexts and when they may be destroyed or lost due to a federal, federally licensed, or federally funded project (Public Law 89-665; 80 Stat. 915; 16 United States Code 470 et seq. [Caltrans, 2012; National Park Service, 2013c]).

Federal Land Policy and Management Act of 1976. This law (P.L. 94-579; 90 Statute 2743, U.S.C. 1701-1782) requires that public lands be managed in a manner that will protect the quality of their scientific values. Specifically, FLPMA was established as a public land policy to "provide for the management, protection, development, and enhancement of the public lands." FLPMA requires federal agencies to manage public lands so that environmental, historic, archeological, and scientific resources are preserved and protected, where appropriate. Though FLPMA does not refer specifically to fossils, the law does protect scientific resources, which includes significant fossils, including vertebrate remains. FLPMA regulates the "use and development of public lands and resources through easements, licenses, and permits." The law requires the public lands to be inventoried so that the data can be used to make informed land-use decisions, and requires permits for the use, occupancy and development of the certain public lands, including the collection of significant fossils for scientific purposes (43 U.S.C. 1701 Section 102, 302 [U.S. Department of the Interior et al., 2001]).

Code of Federal Regulations, Title 43. Under the Title 43, Code of Federal Regulations, Section 8365.1-5, the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a "reasonable amount" of common invertebrate or plant fossils for non-commercial purposes is permissible (43 CFR 8365.1-5 [United States Government Printing Office, 2014]).

D.14.2.2 State

The California Environmental Quality Act (CEQA). This law encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project, and to make decisions based on the findings of those analyses. CEQA also takes into account the laws and procedures of local California jurisdictions.

CEQA includes in its definition of historical resources, "any object [or] site ...that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature constitutes a significant impact under CEQA" (State CEQA Guidelines Appendix G). CEQA does not provide an explicit definition of a "unique paleontological resource," but a definition is implied by comparable language within the act relating to archaeological resources: "The procedures, types of activities, persons, and public agencies required to comply with CEQA are defined in: Guidelines for the Implementation of CEQA, as amended March 29, 1999" (Title 14, Chapter 3, California Code of Regulations: 15000 et seq.) (Association of Environmental Professionals, 2012).

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include avoidance, monitoring, or data recovery excavation.

The California Public Resources Code 5097.5. This law affirms that no person shall willingly or knowingly excavate, remove, or otherwise destroy a vertebrate paleontological site or paleontological feature without the express permission of the overseeing public land agency. It further states under Code 30244 that any development that would adversely impact paleontological resources shall require reasonable mitigation. These regulations apply to projects located on land owned by or under the jurisdiction of the state or any city, county, district, or other public agency (Cal. Pub. Res. Code § 5097.5 [California Office of Historic Preservation, 2005]).

D.14.2.3 Local

Conservation Element of the County of San Bernardino General Plan (2012). Paleontological resources are addressed under the Conservation Element of the County of San Bernardino General Plan (2007). Section V-C2, Cultural/Paleontological Resources, addresses the treatment of paleontological resources for which the following objective and policy are set forth:

> *GOAL CO 3. The County will preserve and promote its historic and prehistoric cultural heritage.*
>
> *Programs.*
>
> 4. *In areas of potential but unknown sensitivity, field surveys prior to grading will be required to establish the need for paleontologic monitoring.*
> 5. *Projects requiring grading plans that are located in areas of known fossil occurrences, or demonstrated in a field survey to have fossils present, will have all rough grading (cuts greater than 3 feet) monitored by trained paleontologic crews working under the direction of a qualified professional, so that fossils exposed during grading can be recovered and preserved. Fossils include large and small vertebrate fossils, the latter recovered by screen washing of bulk samples.*
> 6. *A report of findings with an itemized accession inventory will be prepared as evidence that monitoring has been successfully completed. A preliminary report will be submitted and approved prior to granting of building permits, and a final report will be submitted and approved prior to granting of occupancy permits. The adequacy of paleontologic reports will be determined in consultation with the Curator of Earth Science, San Bernardino County Museum [V-18–V-19].*

Multipurpose Open Space Element of the Riverside County General Plan (2008). Paleontological resources are addressed under the Multipurpose Open Space Element of the Riverside County General Plan (2008), policy OS 19.9, which states the following:

> *This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site grading activities, with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department* [p. OS-43].

The SABER Policy (Safeguard Artifacts Being Excavated in Riverside County) enacted in October 2011 by the Riverside County Board of Supervisors mandates that any paleontological resources found or unearthed in the County of Riverside be curated at the Western Science Center in the City of Hemet. This new policy will be included as an amendment to the Multi-purpose Element of the General Plan Update.

Resource Management Chapter of the Calimesa General Plan (2014). Paleontological resources are addressed under the Resource Management Chapter of the Calimesa General Plan (2014). The following Action Items have been set forth under Goal RM-4, Policy RM-16, which aims to "preserve the City's historical, cultural, archaeological, paleontological, and architectural resources":

> Action Item RM-16.3. *Review all proposed development for the possibility of cultural/archaeological/paleontological sensitivity. When existing information indicates that a site proposed for development may contain paleontological resources, a report stating the extent and potential significance of the resources that may exist within the proposed development shall be prepared and include mitigation measures as appropriate.*

Action Item RM-16.4. *The City will work with the Native American community and others to adopt an appropriate process and procedure for the monitoring of excavation in cultural and paleontological sensitive areas and adopt a process for ensuring the appropriate curation of any cultural or paleontological resources discovered* [City of Calimesa, 2014, p. 6-13–6.14].

Open Space Element of the City of Grand Terrace General Plan (2010). Paleontological resources are addressed under the Open Space Element of the City of Grand Terrace General Plan (2010). The following policies have been set forth under Goal 4.9, which aims to "comply with state and federal regulations to ensure the protection of historical, archaeological, and paleontological resources":

Policy 4.9.1.b. *For areas with documented or inferred resource presence, applicants shall provide studies to document the presence or absences of cultural resources. Such studies shall provide a detailed mitigation plan, including and monitoring program and recovery or preservation plan, based on the recommendations of a qualified archaeologist and/or paleontologist.*

Policy 4.9.1.c. *In the event that a paleontological or archaeological resource is uncovered during the course of construction, ground-disturbing activities in the vicinity of the suspected resource shall be redirected until the nature and extent of the find can be evaluated by a qualified archaeologist and/or paleontologist (as determined by the City). As deemed appropriate by the City, any such resource uncovered during the course of project-related grading or construction shall be recorded and/or removed per applicable City and/or State regulations* [City of Grand Terrace, 2010, p. IV-19].

Conservation and Open Space Element of the Loma Linda General Plan (2009). Paleontological resources are addressed under the Conservation and Open Space Element of the Loma Linda General Plan (2009). The following Implementing Policy has been set forth under Guiding Policy 9.7.5, which aims to "...identify and preserve the archaeological and paleontological resources in Loma Linda":

Implementing Policy 9.7.5.f. *As a standard condition of approval for new development projects, require that, if cultural or paleontological resources are encountered during grading, alteration of earth materials in the vicinity of the find be halted until a qualified expert has evaluated the find and recorded identified cultural resources* [City of Loma Linda, 2009, p. 9-28].

Open Space and Conservation Element of the Redlands General Plan (1995). Paleontological resources are addressed under the Open Space and Conservation Element of the Redlands General Plan (1995). The following Implementing Policy has been set forth under Guiding Policy 7.30a, which aims to "protect archaeological and paleontological resources for their aesthetic, scientific, educational, and cultural values":

Implementing Policy 7.30f. *Work with the San Bernardino County Museum to identify and protect Redlands' significant nonrenewable paleontologic resources* [City of Redlands, 1995, p. Open Space 25–26].

Cities of Banning, Beaumont, and Colton. The Cities of Banning, Beaumont, and Colton do not have mitigation requirements that specifically address potential adverse impacts to paleontological resources.

D.14.3 Environmental Impacts of the Proposed Project

Significant paleontological resources are defined as "identifiable" vertebrate fossils, uncommon invertebrates and plants, and trace fossils that provide a critical piece of paleobiological or geologic data, illustrate a geological principle, or occupy a unique stratigraphic position (SVP, 2010). The loss of any significant paleontological resource which yields information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. Direct impacts on paleontological resources primarily concern the potential destruction of non-renewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to below a significant level through the implementation of paleontological mitigation.

Surface disturbance may result in the exposure of fossils that may never have been unearthed via natural processes. If mitigation measures are implemented, these newly exposed fossils become available for salvage, data recovery, scientific analysis, and preservation into perpetuity at a public museum (beneficial impact). The positive impacts of the results of mitigation include advances in scientific knowledge by both field researchers and paleontologists who study fossils in museum collections, contributions to public education and interpretation, and community involvement and partnerships.

D.14.3.1 Approach to Impact Assessment

In general, for Proposed Project areas which are underlain by paleontologically sensitive geologic units, greater amounts of ground disturbance increase the potential for significant impacts to paleontological resources. For Proposed Project areas that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also impacted.

Direct impacts result from activities related to construction, and occur at the same time and place as the surface disturbing action. The potential for direct impacts on scientifically significant surface and subsurface fossils in fossiliferous sedimentary deposits is controlled by two factors:

1. The depth and lateral extent of disturbance of fossiliferous bedrock and/or surficial sediments; and
2. The depth and lateral extent of occurrence of fossiliferous bedrock and/or surficial sediments beneath the surface.

Ground disturbance has the potential to adversely impact an unknown quantity of fossils which may occur on or underneath the surface in areas containing paleontologically sensitive geologic units. Without mitigation, these fossils, as well as the paleontological data they could provide if properly salvaged and documented, could be adversely impacted (destroyed), rendering them permanently unavailable for future scientific research.

Indirect impacts occur later in time or further away in distance than direct impacts, but are still reasonably foreseeable. They typically include those impacts which result from the normal ongoing operations of facilities constructed within a project area. An example of an indirect adverse impact on paleontological resources would be the construction of a new road that increases public access to a previously inaccessible area, and results in unauthorized fossil collecting and vandalism. Mitigation strategies could include surveys by qualified paleontologists to collect significant surface fossils, transfer them to a public museum, and identify locations of fossil localities in the nearby area which have the potential to yield additional fossils as erosion occurs; and the construction of protective fencing or other barriers around known paleontological sites.

Geologic units are considered "sensitive" if they are known to contain scientifically significant paleontological resources anywhere in their extent. The area of sensitivity is typically defined as the entire rock unit (formation or member thereof) and not limited to areas where surface fossils may be exposed. Using baseline information gathered during a paleontological resource assessment, the sensitivity of the geologic unit(s) underlying a project area can be assigned to one of five classifications (Classes 1 through 5) defined by the BLM (2007). These categories include very high, high, moderate or unknown, low, and very low potential for fossilized remains. The criteria for each sensitivity classification are presented in Section D.14.1.1.

The significance of fossils is directly related to their scientific importance. Significant paleontological resources are defined as "identifiable" vertebrate fossils, uncommon invertebrates and plants, and trace fossils that provide a critical piece of paleobiological or geologic data, illustrate a geological principle, or occupy a unique stratigraphic position (SVP, 2010). Well-preserved and identifiable individual fossils are considered significant if they are a type specimen, rare, a complete specimen, or part of an important diverse fossil assemblage (BLM, 2008). These data are important because they are used to examine evolutionary relationships, provide insight on the development of and interaction between biological communities, establish time scales for geologic studies, and for many other scientific purposes (Scott and Springer, 2003; SVP, 2010).

D.14.3.1.1 Applicant Proposed Measures

SCE has committed to implementing one measure to reduce project impacts to paleontological resources, as shown in Table D.14-5. This Applicant Proposed Measure (APM) and others were outlined in the PEA (SCE, 2013) for reducing the potential impacts of construction and operation of the Proposed Project. In the following analysis of the project's potential to impact paleontological resources, it is assumed that the APM would be implemented as elements of project development, planning, and construction. This APM is incorporated into additional more specific mitigation measures that would be implemented to ensure that all impacts would be reduced to a less than significant level (see Section D.14.3.3).

Table D.14-5. Applicant Proposed Measures – Paleontological Resources

APM #	Text
APM PAL-1	Potential effects of the Proposed Project to sensitive paleontological resources may be mitigated or reduced to a less-than-significant level by implementing a Paleontological Resource Mitigation and Monitoring Plan, which would identify monitoring and treatment requirements for sensitive paleontological resources of significance.

D.14.3.2 Impact Criteria

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). Examples of project-related activities that could "directly" disturb or destroy paleontological resources include excavation, trenching, boring, or any other activity that disturbs the subsurface geologic formation. "Indirect" disturbances or destruction refers to activities where the disturbance or destruction of paleontological resources is reasonably foreseeable, such as where they lead to increased erosion, or unauthorized surface collection or subsurface excavation.

D.14.3.3 Impacts and Mitigation Measures

This section describes the environmental impacts and mitigation measures for the Proposed Project for paleontology. No operational impacts have been identified for paleontological resources; therefore, all impacts addressed here are construction-related. During operation, access roads would not be open to the public; therefore, public access to the project area and the potential for looting would be limited during operation and maintenance activities. Grading of all access roads would be conducted during the construction phase and all environmental impacts for road-building activities are considered under that phase. In addition, vehicular access to the project would be limited to the access roads; therefore, erosion would be negligible during operational activities. The following sections provide a detailed discussion of the impacts, the locations of those impacts, and measures to reduce the impacts to less than significant levels.

Impact PAL-1: Construction of the project could destroy or disturb significant paleontological resources

The potential to discover paleontological resources during construction within the Proposed Project area ranges from very low to very high, depending on the location of ground disturbance. Portions of all 6 segments would be impacted by construction-related ground disturbances such as the excavating, grading, substation building, improvement of access roads, and vegetation removal. The results of the paleontological resources records search and field reconnaissance survey revealed 4 vertebrate localities within the Proposed Project area. In addition, 48 other vertebrate fossil localities have been recorded in the vicinity of the Proposed Project area. All localities yielded fossils within the highly sensitive San Timoteo Formation and the moderately sensitive Quaternary Older Alluvium within or near Segments 2, 3, and 4. Construction within these segments has the potential to destroy or disturb significant paleontological resources, and mitigation is required. Mitigation Measures PAL-1a through PAL-1e are recommended to minimize or avoid impacts to paleontological resources.

Five mitigation measures are presented to reduce or avoid impacts to paleontological resources.

Mitigation Measures for Impact PAL-1: Construction of the project could destroy or disturb significant paleontological resources

PAL-1a **Inventory and evaluate paleontological resources.** Prior to construction and all other surface-disturbing activities, the Applicant shall have conducted and submitted an inventory of significant paleontological resources within the Proposed Project area. The report shall be based on the paleontological field reconnaissance surveys (conducted by PaleoSolutions, February 2012 to April 2013).

If any changes are made to the extent or alignment of the Proposed Project subsequent to the completed field surveys, then additional field surveys shall be conducted within new project areas. The additional field surveys shall be conducted in areas identified as having moderate, undetermined, or high paleontological resource potential. The purpose of the field survey is to visually inspect the ground surface for exposed fossils and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. Field surveys shall be conducted in all areas of potential ground disturbance, outside of the previously surveyed potential impact areas.

As part of the inventory report, the paleontological sensitivity rankings of geologic units examined in the field shall be evaluated using the BLM's (2008) PFYC System and refined based on the results of the pedestrian surveys. The report shall be submitted to the CPUC and BLM for review at least 60 days before the start of construction, and shall be modified in response to agency comments, with the final report completed at least 30 days before the first ground disturbance.

PAL-1b **Develop Paleontological Resource Mitigation and Monitoring Plan.** Following completion and approval of the Paleontological Resources Report (required in Mitigation Measure PAL-1a) and prior to the start of ground-disturbing construction, the Applicant shall prepare and submit to CPUC and BLM for review and approval, a Paleontological Resources Mitigation and Monitoring Plan (Plan), consistent with the following requirements:

- The Plan shall be prepared by a Qualified Paleontologist and shall be based on Society of Vertebrate Paleontology (SVP) guidelines and meet all regulatory requirements. The qualified paleontologist shall have a Master's Degree or Ph.D. in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques.
- The Plan shall include a site-specific investigation to identify construction impact areas of moderate (PFYC 3a) to very high (PFYC 5) sensitivity for encountering significant resources and the approximate depths at which those resources are likely to be encountered for each component of each segment of the Proposed Project.
- The Plan shall require the qualified paleontological monitor to monitor all construction-related ground disturbance in sediments determined to have a moderate (PFYC 3a) to very high (PFYC 5) sensitivity.
- The Plan shall define monitoring procedures and methodology, and shall specify that sediments of undetermined sensitivity shall be monitored on a part-time basis (as determined by the Qualified Paleontologist). Sediments with very low or low sensitivity will not require paleontological monitoring.
- The Plan shall state which resources will be avoided and which shall be recovered for their data potential. Where possible, recovery is preferred over avoidance in order to mitigate the potential for looting of paleontological resources. The Plan shall also detail methods of recovery, preparation and analysis of specimens, final curation of specimens at a federally accredited repository, data analysis, and reporting.
- The Plan shall specify that all paleontological work undertaken by the Applicant on public lands administered by BLM shall be carried out by qualified, permitted paleontologists with the appropriate current Paleontological Resources Use Permit.

PAL-1c **Train construction personnel.** Prior to the initiation of construction, all construction personnel shall be trained regarding the recognition of possible subsurface paleontological resources and protection of all paleontological resources during construction. The Applicant shall complete training for all construction personnel. Training shall inform all construction personnel of the procedures to be followed upon the discovery of paleontological materials. Training shall inform all construction personnel that Environmentally Sensitive Areas (ESAs) may include areas determined to be paleontologically sensitive. The ESAs must be avoided and travel and construction activity must be confined to designated roads and areas. All personnel shall be instructed that unauthorized collection or disturbance of protected fossils on or off the right-of-way by the Applicant, his representatives, or employees will not be allowed. Violators will be subject to prosecution under the appropriate State and federal laws and violations will be grounds for removal from the project. Unauthorized resource collection or disturbance may constitute grounds for the issuance of a stop work order. The following issues shall be addressed in training or in preparation for construction:

- The Applicant shall provide a background briefing for supervisory personnel describing the potential for exposing paleontological resources, the location of any potential ESAs, and procedures and notifications required in the event of discoveries by project personnel or paleontological monitors. Supervisory personnel shall enforce restrictions on collection or disturbance of fossils.
- Upon discovery of paleontological resources by paleontologists or construction personnel, work in the immediate area of the find shall be halted and the Applicant's paleontologist notified. Once the find has been inspected and a preliminary assessment made, the Applicant's paleontologist will notify the BLM and CPUC and proceed with data recovery in accordance with the approved Plan consistent with Mitigation Measure PAL-1b (Develop Paleontological Resource Mitigation and Monitoring Plan).

PAL-1d **Monitor construction for paleontological resources.** Based on the paleontological sensitivity assessment and Paleontological Resource Mitigation and Monitoring Plan consistent with Mitigation Measure PAL-1b (Develop Paleontological Mitigation and Monitoring Plan), the Applicant shall conduct full-time construction monitoring through its qualified paleontological monitor in areas determined to have moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Sediments of unknown (PFYC 3b) sensitivity shall be monitored by a qualified paleontological monitor on a part-time basis (as outlined in the Plan). Geologic Units with very low (PFYC 1) or low (PFYC 2) sensitivity shall not be monitored. Monitoring will entail the visual inspection of excavated or graded areas and trench sidewalls. In the event that a paleontological resource is discovered, the monitor will have the authority to temporarily halt the construction equipment around the find until it is assessed for scientific significance, and collected. A temporary construction exclusion zone (i.e., environmentally sensitive area [ESA]) of at least 50 feet, consisting at a minimum of lath and flagging tape, will be erected around the discovery. The exclusion zone acts as a buffer around the discovery and is maintained for safety. SCE will report the discovery to the CPUC and BLM within 24 hours and/or as outlined in the Plan. Construction activities can occur outside the buffer if it is safe to do so. The size of the buffer may be increased or decreased once the monitor adequately explores the discovery to determine its size and significance. If indicators of potential microvertebrate fossils are found, screening of a test sample shall be carried out as outlined in SVP 2010. This procedure will be outlined in the Plan.

Paleontological resource monitors per SVP (2010) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a biostratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring, or
- AS or AA in geology, paleontology, or biology and demonstrated two years of experience collecting and salvaging fossil materials in the state or geologic province of the specific project, or

- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in the state or geologic province of the specific project.
- Monitors must demonstrate proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques

Copies of Monitoring Reports shall be submitted to the CPUC/BLM on a weekly basis.

PAL-1e **Final reporting and curation.** At the conclusion of laboratory work and museum curation, a final report will be prepared describing the results of the paleontological monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the Proposed Project area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, then a copy of the report will also be submitted to the designated museum repository.

All significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation no more than 60 days after all analyses are completed. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossils specimens will be identified to the lowest taxonomic level, cataloged, analyzed, and delivered to an accredited museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of the Applicant.

D.14.3.4 Impacts of Connected Actions

Impact PAL-1: Construction of the project could destroy or disturb significant paleontological resources

Common to All Areas. The potential to discover paleontological resources during construction of connected action projects varies, depending on the location of ground disturbance. For the Blythe area it ranges from low to high; for the Desert Center area is ranges from very low to high. In general, the potential for a given project to result in adverse impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project. Ground disturbance is required for construction of all of the solar projects. Ground-disturbing activities typically associated with this type of project include excavation, grading, ancillary facilities construction, improvement of access roads, and vegetation removal.

Previously unrecorded or unknown fossils may be identified at nearly any development site that is underlain by geologic deposits that are conducive to the preservation of paleontological resources. When paleontological resources are discovered during project construction, federal and State laws and regulations impose specific handling, reporting and recovery protocols to avoid or minimize impacts to such resources as discussed in Section D.14.2 above. The exact number of paleontological resources, if any, that might be adversely affected by connected action projects cannot be determined without a comprehensive inventory and assessment of the paleontological resource potential of each project. However, based on the regional geology and known fossil localities for the areas, it is reasonable to assume that buried resources exist and may be uncovered during ground-disturbing activities. Should resources be discovered during construction of the connected action projects, they would be subject to federal and State legal requirements designed to protect them, thereby reducing the effect of impacts. As a result, resource protection measures similar to Mitigation Measures PAL-1a through PAL-1e, as described in Section D.14.3.3, would minimize or avoid impacts to paleontological resources encountered during construction of the connected action projects.

D.14.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.14.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Paleontological resources within the ROW are described by segment in Section D.14.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.14.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

The Proposed Project identified that the loss of any significant paleontological resource, which yields information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. This impact also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.14.3.3, except where otherwise noted.

Impact PAL-1: Construction of the project could destroy or disturb significant paleontological resources

The potential to discover paleontological resources during construction depends on the location of ground disturbing activities such as excavating, grading, improvement of access roads, and vegetation removal.

The minor adjustment to the location of certain Segment 4, 5, and 6 towers would not change the risk of disturbance or destruction of significant paleontological resources compared to the Proposed Project. Construction has the potential to destroy valuable resources, and mitigation is required. Implementation of Mitigation Measures PAL-1a (Inventory and evaluate paleontological resources), PAL-1b (Develop Paleontological Resource Mitigation and Monitoring Plan), PAL-1c (Train construction personnel), PAL-1d (Monitor construction for paleontological resources), and PAL-1e (Final reporting and curation) would minimize or avoid adverse effects to paleontological resources.

D.14.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

The Proposed Project identified that the loss of any significant paleontological resource, which yields information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. This impact also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.14.3.3, except where otherwise noted.

Impact PAL-1: Construction of the project could destroy or disturb significant paleontological resources

This alternative would increase the amount of subsurface disturbance compared to the Proposed Project, which would increase the risk of disturbance or destruction of significant paleontological resources, if they occur at this location. This alternative is not located in an area of high paleontological sensitivity, but there remains that potential for resource disturbance. Implementation of Mitigation Measures PAL-1a (Inventory and evaluate paleontological resources), PAL-1b (Develop Paleontological Resource Mitigation and Monitoring Plan), PAL-1c (Train construction personnel), PAL-1d (Monitor construction for paleontological resources), and PAL-1e (Final reporting and curation) would minimize adverse effects to paleontological resources.

D.14.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

The Proposed Project identified that the loss of any significant paleontological resource, which yields information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. This impact also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.14.3.3, except where otherwise noted.

Impact PAL-1: Construction of the project could destroy or disturb significant paleontological resources

The potential to discover paleontological resources during construction depends on the location of ground disturbance. Portions of all 6 segments would be impacted by construction-related ground disturbances such as the excavating, grading, substation building, improvement of access roads, and vegetation removal. The results of the paleontological resources records search and field reconnaissance survey revealed 4 vertebrate localities within the Proposed Project area. In addition, 48 other vertebrate fossil localities have been recorded in the vicinity of the Proposed Project area. All localities yielded fossils within the highly sensitive San Timoteo Formation and the moderately sensitive Quaternary Older Alluvium within or near Segments 2, 3, and 4. Construction within these segments has the potential to destroy or disturb significant paleontological resources.

The Phase Build Alternative would reduce the amount of construction activity compared to the Proposed Project, and consequently would reduce the risk of disturbance or destruction of significant paleontological resources compared to the Proposed Project. Similar to the Proposed Project, the potential to discover paleontological resources during construction within the project area ranges from very low to very high, depending on the location of ground disturbance. Portions of all 6 segments would be impacted by construction-related ground disturbances, though this alternative would have less ground disturbance than the Proposed Project.

Construction within areas of moderate to high fossil yield has the potential to destroy valuable resources, and mitigation is required. Implementation of Mitigation Measures PAL-1a (Inventory and evaluate paleontological resources), PAL-1b (Develop Paleontological Resource Mitigation and Monitoring Plan), PAL-1c (Train construction personnel), PAL-1d (Monitor construction for paleontological resources), and

PAL-1e (Final reporting and curation) would minimize or avoid adverse effects to paleontological resources.

D.14.5 Environmental Impacts of No Action Alternative

D.14.5.1 No Action Alternative Option 1

No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

Devers to Beaumont Substation. Portions of the 500 kV alignment (from MP 20.0 to MP 22.2) are within areas of high paleontological sensitivity. These areas consist of Holocene alluvium over Pleistocene alluvium and have the potential for yielding undiscovered fossil remains. Other areas of high (at depth) paleontological sensitivity occur from MP 22.6 to MP 22.9 and MP 24.2 to MP 28.8. These are in the San Timoteo Formation and have a high potential to contain significant paleontological resources. The area between MP 22.2 to MP 22.6 contains Pleistocene older alluvium and has the potential for yielding undiscovered fossil remains. Lastly, the area between MP 24.0 to MP 24.2 contains Holocene alluvium possibly over San Timoteo Formation and may also yield undiscovered fossil remains.

Ground disturbance and installation of foundations in these are other areas could encounter undiscovered paleontological resources. Provisions for discovery and treatment of significant fossil remains will reduce project effects to these resources through implementation of mitigation measures requiring inventory of paleontological resources in the Final APE, developing and implementing a Paleontological Monitoring and Treatment Plan, monitoring construction for paleontology, conducting paleontological data recovery, and training construction personnel to be aware of resources. This would ensure discovery, evaluation, and treatment of significant paleontological resources.

Beaumont Substation and Beaumont to El Casco Substation. The Beaumont Substation area and the land between the substation and El Casco Substation is primarily alluvium and the San Timoteo Formation. The alluvium and terrace deposits here consist of flat-lying sediments, soil horizons, fine grained fluviatile sediments, and older alluvium of Late Pleistocene age. These deposits were laid down approximately 50,000 years ago and may contain significant paleontological resources. The San Timoteo Formation consists of siltstones, sandstones, and gravel fanglomerates and was deposited between 2.5 to 0.5 million years ago. The formation is considered to have high potential to contain significant nonrenewable paleontological resources. Mitigation such as that described above for the 500 kV segment would be required to ensure discover, evaluation, and treatment of significant paleontological resources occurs.

D.14.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. The route for No Action Alternative Option 2 passes through several paleontologically sensitive areas, including the Perris Valley and the alluvium surrounding Temescal Wash.

Ground disturbance, such as installation of transmission tower foundations in paleontologically sensitive areas, could encounter undiscovered paleontological resources. Provisions for discovery and treatment of significant fossil remains would reduce project adverse effects to these resources through implementation of mitigation measures requiring inventory of paleontological resources in the area of potential effects, development and implementation of a Paleontological Monitoring and Treatment Plan, conducting paleontological data recovery, and training of construction personnel in identification and awareness of paleontological resources. These measures would reduce the potential for adverse effects to paleontological resources by ensuring that discovery, evaluation, and treatment of significant paleontological resources is properly planned and implemented.

D.14.6 Mitigation Monitoring, Compliance, and Reporting

Table D.14-6 presents the mitigation monitoring, compliance, and reporting actions for paleontological resources.

Table D.14-6. Mitigation Monitoring Program – Paleontological Resources

MITIGATION MEASURE	**PAL-1a: Inventory and evaluate paleontological resources.** Prior to construction and all other surface-disturbing activities, the Applicant shall have conducted and submitted an inventory of significant paleontological resources within the Proposed Project area. The report shall be based on the paleontological field reconnaissance surveys (conducted by PaleoSolutions, February 2012 to April 2013). If any changes are made to the extent or alignment of the Proposed Project subsequent to the completed field surveys, then additional field surveys shall be conducted within new project areas. The additional field surveys shall be conducted in areas identified as having moderate, undetermined, or high paleontological resource potential. The purpose of the field survey is to visually inspect the ground surface for exposed fossils and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. Field surveys shall be conducted in all areas of potential ground disturbance, outside of the previously surveyed potential impact areas. As part of the inventory report, the paleontological sensitivity rankings of geologic units examined in the field shall be evaluated using the BLM's (2008) PFYC System and refined based on the results of the pedestrian surveys. The report shall be submitted to the CPUC and BLM for review at least 60 days before the start of construction, and shall be modified in response to agency comments, with the final report completed at least 30 days before the first ground disturbance.
Location	All areas disturbed in project area
Monitoring / Reporting Action	Receive reports; review and provide comments
Effectiveness Criteria	Significant paleontological resources are inventoried; areas of potential finds are identified.
Responsible Agency	CPUC/BLM
Timing	At least 60 days before construction, draft report. At least 30 days before ground disturbance, final report.

Table D.14-6. Mitigation Monitoring Program – Paleontological Resources

MITIGATION MEASURE	**PAL-1b: Develop Paleontological Resource Mitigation and Monitoring Plan.** Following completion and approval of the Paleontological Resources Report (required in Mitigation Measure PAL-1a) and prior to the start of ground-disturbing construction, the Applicant shall prepare and submit to CPUC and BLM for review and approval, a Paleontological Resources Mitigation and Monitoring Plan (Plan), consistent with the following requirements: ▪ The Plan shall be prepared by a Qualified Paleontologist and shall be based on Society of Vertebrate Paleontology (SVP) guidelines and meet all regulatory requirements. The qualified paleontologist shall have a Master's Degree or Ph.D. in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques. ▪ The Plan shall include a site-specific investigation to identify construction impact areas of moderate (PFYC 3a) to very high (PFYC 5) sensitivity for encountering significant resources and the approximate depths at which those resources are likely to be encountered for each component of each segment of the Proposed Project. ▪ The Plan shall require the qualified paleontological monitor to monitor all construction-related ground disturbance in sediments determined to have a moderate (PFYC 3a) to very high (PFYC 5) sensitivity. ▪ The Plan shall define monitoring procedures and methodology, and shall specify that sediments of undetermined sensitivity shall be monitored on a part-time basis (as determined by the Qualified Paleontologist). Sediments with very low or low sensitivity will not require paleontological monitoring. ▪ The Plan shall state which resources will be avoided and which shall be recovered for their data potential. Where possible, recovery is preferred over avoidance in order to mitigate the potential for looting of paleontological resources. The Plan shall also detail methods of recovery, preparation and analysis of specimens, final curation of specimens at a federally accredited repository, data analysis, and reporting. ▪ The Plan shall specify that all paleontological work undertaken by the Applicant on public lands administered by BLM shall be carried out by qualified, permitted paleontologists with the appropriate current Paleontological Resources Use Permit.
Location	Entire project area
Monitoring / Reporting Action	Receive plan; review and approve
Effectiveness Criteria	Plan meets mitigation measure requirement; appropriate strategies and monitoring methods are defined and followed.
Responsible Agency	CPUC/BLM
Timing	Following completion and approval of Paleontological Resources Report and prior to ground-disturbing construction.

Table D.14-6. Mitigation Monitoring Program – Paleontological Resources

MITIGATION MEASURE	**PAL-1c: Train construction personnel.** Prior to the initiation of construction, all construction personnel shall be trained regarding the recognition of possible subsurface paleontological resources and protection of all paleontological resources during construction. The Applicant shall complete training for all construction personnel. Training shall inform all construction personnel of the procedures to be followed upon the discovery of paleontological materials. Training shall inform all construction personnel that Environmentally Sensitive Areas (ESAs) may include areas determined to be paleontologically sensitive. The ESAs must be avoided and that travel and construction activity must be confined to designated roads and areas. All personnel shall be instructed that unauthorized collection or disturbance of protected fossils on or off the right-of-way by the Applicant, his representatives, or employees will not be allowed. Violators will be subject to prosecution under the appropriate State and federal laws and violations will be grounds for removal from the project. Unauthorized resource collection or disturbance may constitute grounds for the issuance of a stop work order. The following issues shall be addressed in training or in preparation for construction: ▪ The Applicant shall provide a background briefing for supervisory personnel describing the potential for exposing paleontological resources, the location of any potential ESAs, and procedures and notifications required in the event of discoveries by project personnel or paleontological monitors. Supervisory personnel shall enforce restrictions on collection or disturbance of fossils. ▪ Upon discovery of paleontological resources by paleontologists or construction personnel, work in the immediate area of the find shall be halted and the Applicant's paleontologist notified. Once the find has been inspected and a preliminary assessment made, the Applicant's paleontologist will notify the BLM and CPUC and proceed with data recovery in accordance with the approved Plan consistent with Mitigation Measure PAL-1b (Develop Paleontological Resource Mitigation and Monitoring Plan).
Location	All areas disturbed in project area
Monitoring / Reporting Action	Review training materials; confirm training occurs
Effectiveness Criteria	All construction personnel are properly trained before working on project
Responsible Agency	CPUC/BLM
Timing	Prior to construction.

Table D.14-6. Mitigation Monitoring Program – Paleontological Resources

MITIGATION MEASURE	**PAL-1d: Monitor construction for paleontological resources.** Based on the paleontological sensitivity assessment and Paleontological Resource Mitigation and Monitoring Plan consistent with Mitigation Measure PAL-1b (Develop Paleontological Mitigation and Monitoring Plan), the Applicant shall conduct full-time construction monitoring through its qualified paleontological monitor in areas determined to have moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Sediments of unknown (PFYC 3b) sensitivity shall be monitored by a qualified paleontological monitor on a part-time basis (as outlined in the Plan). Geologic Units with very low (PFYC 1) or low (PFYC 2) sensitivity shall not be monitored. Monitoring will entail the visual inspection of excavated or graded areas and trench sidewalls. In the event that a paleontological resource is discovered, the monitor will have the authority to temporarily halt the construction equipment around the find until it is assessed for scientific significance, and collected. A temporary construction exclusion zone (i.e., environmentally sensitive area [ESA]) of at least 50 feet, consisting at a minimum of lath and flagging tape, will be erected around the discovery. The exclusion zone acts as a buffer around the discovery and is maintained for safety. SCE will report the discovery to the CPUC and BLM within 24 hours and/or as outlined in the Plan. Construction activities can occur outside the buffer if it is safe to do so. The size of the buffer may be increased or decreased once the monitor adequately explores the discovery to determine its size and significance. If indicators of potential microvertebrate fossils are found, screening of a test sample shall be carried out as outlined in SVP 2010. This procedure will be outlined in the Plan. Paleontological resource monitors per SVP (2010) shall have the equivalent of the following qualifications: ▪ BS or BA degree in geology or paleontology and one year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a biostratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring, or ▪ AS or AA in geology, paleontology, or biology and demonstrated two years of experience collecting and salvaging fossil materials in the state or geologic province of the specific project, or ▪ Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in the state or geologic province of the specific project. ▪ Monitors must demonstrate proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques. Copies of Monitoring Reports shall be submitted to the CPUC/BLM on a weekly basis.
Location	Entire project area
Monitoring / Reporting Action	CPUC/BLM monitors confirm that SCE monitors are present during construction as required and perform duties as outlined; exclusion zones are established as required; appropriate reporting occurs.
Effectiveness Criteria	Monitors are present during construction as required and perform duties as outlined; exclusion zones are established as required; appropriate reporting occurs.
Responsible Agency	CPUC/BLM
Timing	When construction occurs in areas to have moderate to very high sensitivity for paleontological resources.

Table D.14-6. Mitigation Monitoring Program – Paleontological Resources

MITIGATION MEASURE	**PAL-1e: Final reporting and curation.** At the conclusion of laboratory work and museum curation, a final report will be prepared describing the results of the paleontological monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the Proposed Project area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, then a copy of the report will also be submitted to the designated museum repository. All significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation no more than 60 days after all analyses are completed. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossils specimens will be identified to the lowest taxonomic level, cataloged, analyzed, and delivered to an accredited museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of the Applicant.
Location	Entire project area
Monitoring / Reporting Action	CPUC/BLM monitor confirms that curation has occurred consistent with mitigation measures requirements and report is prepared.
Effectiveness Criteria	A final report is prepared and curation has occurred
Responsible Agency	CPUC/BLM
Timing	No more than 60 days after all fieldwork is completed

D.14.7 References

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D.15 Recreation

This section describes the affected environment for Recreation in Section D.15.1 and presents the relevant regulations and standards in Section D.15.2. Sections D.15.3 through D.15.5 describe the impacts of the Proposed Project and the alternatives. Section D.15.6 presents the mitigation measures and mitigation monitoring requirements, and Section D.15.7 lists references cited.

A recreation area is any site or facility that is used by the public for recreational activities. Recreation areas may include: national, State, county, or city parks; refuges or preserves; open space; cultural centers or museums; campgrounds; significant ecological areas; special recreation management areas, areas of critical environmental concern (ACEC);[1] or private recreational sites such as golf courses.

D.15.1 Environmental Setting / Affected Environment

D.15.1.1 Regional Setting and Approach to Data Collection

The Proposed Project and alternatives are located within or pass adjacent to recreation areas under the jurisdiction of the Bureau of Land Management (BLM), USDA Forest Service (USFS), California Department of Parks and Recreation, Caltrans, San Bernardino and Riverside Counties, and several cities. Field data were collected to identify recreation along the Proposed Project and alternatives. The locations of these recreation areas are shown in Figures D.15-1a through D.15-1k. These provide the locations of recreation by Segment on a larger scale. The following discussion describes the identified recreation facilities within 0.25 miles of the Proposed Project route. Recreation areas located outside of this 0.5 miles wide corridor are identified for orientation purposes in the environmental setting sections, but are not considered in the impact assessment.

D.15.1.2 Environmental Setting by Segment

The project study area includes the cities of Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Palm Springs, Rancho Cucamonga, Redlands, San Bernardino, and Yucaipa, and unincorporated areas of Riverside and San Bernardino Counties. The Proposed Project component in the City of Rancho Cucamonga is limited to improvements within the Mechanical Electrical Equipment Room (MEER) at Etiwanda Substation. The extent of this work within an existing facility would not have the potential to affect recreational resources in the City of Rancho Cucamonga; therefore, recreation areas within the City of Rancho Cucamonga are not discussed.

Figures D.15-1a through D.15-1k show the locations of existing park and recreation areas. Table D.15-1 provides details for each recreation resource, including the type of resource, amenities, and location relative to the Proposed Project. Some of these resources are described further in Sections D.15.1.2.1 through D.15.1.2.6.

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1 ACEC or "Areas of Critical Environmental Concern" are areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards (FLPMA Section 103 (a), 1976).

Table D.15-1. Recreational Resources Within the Project Study Area

No.	Name	Type	Area of Impact	Managing Entity	Location	Amenities	Distance from Proposed Project	Segment
1	Rancho Mediterrania Mobile Home Estates	Park	1%	Private	700 East Washington Street (Sorrento Drive), City of Colton	Clubhouse, pool, open green space, community center, tot lot	Within 1/4 mile of ROW	2
2	Bike Lanes (on street)	Trail/bike	118 linear feet	City of Grand Terrace	Barton Road	Biking (on street)	Within 1/4 mile of ROW	2
3	Mt. Vernon Avenue Bike Lane	Trail/bike	—	City of Grand Terrace	Mt. Vernon Avenue	Biking	Within 1/4 mile of ROW	2
4	Grand Terrace Senior Center Park	Park	—	City of Grand Terrace	22627 Grand Terrace Road	Walking, arts/crafts, classes	Within 1/4 mile of ROW, within 500 feet of staging yards	2
5	Santa Ana River Trail	Trail/bike	—	City of San Bernardino	Santa Ana River Trail System	Trail	Adjacent to the corridor	1
6	San Bernardino Avenue Bike Trail	Trail/bike	—	City of San Bernardino	San Bernardino Avenue	Bike Lane	Within 1/4 mile of ROW	1
7	Barton Road Class II Bike Lane	Trail/bike	150 linear feet	City of Loma Linda	Barton Road	Biking	Within 1/4 mile of ROW	2
8	Sun Park	Park	—	City of Loma Linda	Sun Avenue	Picnic area	Within 1/4 mile of ROW, within 500 feet of subtransmission	1
9	Cottonwood Park	Park	—	City of Loma Linda	Cottonwood Avenue	Green space, play area, picnic area	Within 500 feet of Distribution, within 0.25 miles of subtransmission and access roads	1
*	Baseball Field Park	Park	—	City of Loma Linda	Mountain View Ave at Entrada del Parque	6.4 acres, baseball fields	Within 1/4 mile of ROW	1
*	Bryn Mawr Veterans Memorial Park	Park	—	City of Loma Linda	Corner of Juanita and Mayberry Streets	1.4 acres, basketball courts	Within 1/4 mile of relocated distribution line	1
*	Loma Linda Dog Park	Park	—	City of Loma Linda	Beaumont Ave and Mountain View Ave	0.7 acres, small and large dog areas	Within 1/4 mile of ROW	1
*	Heritage Park	Park	—	City of Redlands	Nevada St and Orange Ave	18 acres, Master Plan proposed	Adjacent to the subtransmission route on Iowa St	1
10	Mountain View Avenue Class II Bikeway	Trail/bike	—	City of Loma Linda	Mountain View Avenue	Biking	Within 1/4 mile of ROW	2

Table D.15-1. Recreational Resources Within the Project Study Area

No.	Name	Type	Area of Impact	Managing Entity	Location	Amenities	Distance from Proposed Project	Segment
11	Hulda Crooks Park	Park	—	City Loma Linda	Corner of Beaumont Avenue and Mountain View Avenue	50 acres; barbecue, picnic tables, volleyball/sports court, trails/open space	Within 1/4 mile of ROW	2
12	South Hills Preserve	Trails/open space	6%	City of Loma Linda	City of Loma Linda and City of Loma Linda Sphere of Influence (unincorporated San Bernardino and Riverside Counties)	Trails/open space	Within 1/4 mile of ROW	2,3
13	Lillian V. Miller Memorial Trail (also referred to as the Edison Easement Trail)	Trail/bike	6,307 linear feet	City Loma Linda	Between Beaumont Avenue and Mission Road	Paved and earthen trails, benches, drinking fountains	Within 1/4 mile of ROW	1
14	Leonard Bailey Park	Park	—	City of Loma Linda	Lawton Avenue and Whittier Avenue	10 acres; barbeque pits, tennis courts, turf/landscaping; proposed soccer field	Within 1/4 mile of distribution	1
15	San Bernardino County Museum	Museum	—	County of San Bernardino	2024 Orange Tree Lane	Regional museum with exhibits and collections in cultural and natural history	Within 0.25 miles of subtransmission	1
16	Brookside Park	Park	—	Private	Brookside Avenue, City of Redlands	Green space, picnic areas, play area	Within 1/4 mile of subtransmission	1
17**	Moonlight Farms Horse Exercise Track	No longer in operation						
18	San Timoteo Canyon State Park	Park	5%	California Dept of Parks and Recreation	Unincorporated Riverside County	Open space, not yet open to public, expected to provide hiking, horse trails, and camping	Within 1/4 mile of ROW, crossed by ROW	3
19	El Casco Lake	Other	—	Private	San Timoteo Canyon Road and Lakeshore Drive, Unincorporated Riverside County	Fishing	Within 1/4 mile of ROW	3
20	Halo Resorts	Other	—	Private	San Timoteo Canyon Road and Entranz Boulevard, City of Redlands	Camping, fishing	Within 1/4 mile of ROW r	3

Table D.15-1. Recreational Resources Within the Project Study Area

No.	Name	Type	Area of Impact	Managing Entity	Location	Amenities	Distance from Proposed Project	Segment
21	Norton Younglove Preserve/Reserve	Other	2%	Riverside County Regional Park and Open-Space District	Unincorporated Riverside County	Open space, hunting	Within 1/4 mile of ROW, crossed by ROW	3,4
22	Bike Lanes (on street)	Trail/bike	442 linear feet	City of Beaumont	Palmer Avenue	Biking (on street)	Within 1/4 mile of ROW	4
23	Morongo Golf Club at Tukwet Canyon	Golf course	—	Private	36211 Champions Drive	Golf course and clubhouse	Partially within the existing WOD corridor	4
24	Trevino Community Park	Park	—	City of Beaumont	Cherry Valley Boulevard	Sports fields, tennis courts	Within 500 feet of the existing WOD corridor	4
25	Interstate 10 Rest Area	Other	7%	Caltrans	North side of I-10 south of Brookside Avenue bridge, City of Calimesa	Open green space, walking, restrooms	Within 1/4 mile of ROW	4
26	Cherry Valley Lakes RV Campground	Other	35%	Private	36805 Brookside Avenue, Unincorporated Riverside County	Camping	Within 1/4 mile of ROW, crossed by ROW	4
27	Stetson Community Park	Park	100%	City of Beaumont	Monte Verde Drive	Open green space, trails	Within ROW	4
28	Oak Valley Golf Club	Golf course	18%	Private	1888 Golf Club Drive	Golf Course	Within 1/4 mile of ROW, crossed by ROW	4
29	Oak Valley Park	Park	91%	City of Beaumont	Oak View Drive	Disc Golf, open green space, trails	Within ROW	4
30	Noble Creek Regional Park	Park	13%	Beaumont-Cherry Valley Recreation and Park District	650 West Oak Valley Parkway, City of Beaumont	Sports fields, raceway, dog park, equestrian center, tennis courts, RV sites	Within 1/4 mile of ROW, crossed by ROW	4
31	Rangel Park	Park	—	City of Beaumont	West 4th Street	Sports fields, play area, picnic area	Within 1/4 mile of staging yards and telecommunications	4
32	Beaumont Avenue Class I Path	Trail/bike	400 linear feet	City of Beaumont	West side of Beaumont Avenue	Paved trail – cycling and walking	Within 1/4 mile of ROW, crossed by ROW	4
33	Drainage Class I Path	Trail/bike path	164 linear feet	City of Beaumont	Parallel to drainage between Cougar Way and Beaumont Avenue	Paved trail – cycling and walking	Within 1/4 mile of ROW, crossed by ROW	4

Table D.15-1. Recreational Resources Within the Project Study Area

No.	Name	Type	Area of Impact	Managing Entity	Location	Amenities	Distance from Proposed Project	Segment
34	SCE Corridor Class I Path	Trail/bike	3,973 linear feet	City of Beaumont	SCE Corridor between Cherry Ave and Beaumont Avenue	Paved Trail – cycling and walking	In ROW	4
35	Albert A. Chatigny Sr. Community Center	Community center	—	City of Beaumont	1310 Oak Valley Parkway	Basketball court, playground, gym	Within 1/4 mile of ROW	4
36	Cherry Avenue Class I Path	Trail/bike	3,170 linear feet	City of Beaumont	Between Cherry Avenue and Starlight Avenue	Paved Trail – cycling and walking	In ROW	4
37	Stewart Park	Park	—	City of Beaumont	Located at the intersection of 8th & 11th and Orange & Maple Avenues	Play area, open space	Within 1/4 mile of telecom line	
38	Sun Lakes Country Club Golf Course	Golf course	—	Private	850 S. Country Club Drive, City of Banning	Golf Course	Within 1/4 mile of telecommunications	4
39	Gilman Historic Ranch	Other	—	Riverside County Regional Park and Open-Space District	1901 West Wilson Street, City of Banning	Historic tours, picnic tables, barbeques, and museum	Partially within the existing WOD corridor	4
40	Lions Park	Park	—	City of Banning	S. Hargrave Street,	Sports fields, play area	Within 1/4 mile of telecommunications	5
41	Roosevelt Williams Park	Park	—	City of Banning	Located at the corner of Wilson and Blanchard Streets	Play area, basketball courts, picnic area, boys & girls club	Within 1/4 mile of telecommunications and Matich Yard	5
42	BLM Land	Other	15%	Bureau of Land Management	Various parcels within, north and south of PS, between SR-62 and Rushmore Avenue	Open Space	Within 1/4 mile of ROW, crossed by ROW	6
43	Pacific Crest National Trail	Trail	607 linear feet	USFS	Unincorporated Riverside County	National Scenic Trail; 2,650 miles through California, Oregon, and Washington	Within 1/4 mile of ROW, crossed by ROW	6
44	Rest Area	Other	—	Caltrans	I-10 W/E, Exit 113	Bathrooms, picnic tables, phones	Within 1/4 mile of access roads	6

* Not shown on Figures D.15-1a through D.15-1k.
** The recreational facility identified as 17 in the PEA (Moonlight Farms Horse Exercise Track) is no longer in operation.
Source: SCE, 2013; Loma Linda, no date; Redlands, 2012.

Federal, state, local and private parks and recreational areas, including open space and trails, are found across the project study area. Substantial portions of land within both counties in the project study area are public land, including federal land administered by the BLM or the USFS, state parks, county parks and open spaces, and municipal parks and facilities. Private recreational facilities within or near the project study area include open spaces, equestrian facilities, trails, golf courses, and campgrounds.

D.15.1.2.1 Segment 1: San Bernardino

The San Bernardino Substation to San Bernardino Junction segment would traverse approximately 0.4 miles of open space in the City of Loma Linda, passing through residential and industrial development as well as agricultural areas. The line would be within 0.25 miles of Cottonwood Park, Baseball Field Park, Loma Linda Dog Park (within ROW), Leonard Bailey Park, Brookside Park, and Heritage Park. These parks are described in Table D.15-1 and shown on Figures D.15-1a and D.15-1b.

The line would be rebuilt approximately 0.1 miles east of the 19.6-acre Hulda Crooks Park. Hulda Crooks Park, operated by the City of Loma Linda, would be located in both Segment 1 and 2. Hulda Crooks Park features playground equipment, barbecue pits, basketball, volleyball, and lighted tennis courts, and an open area for field sports. Approximately 12 acres of the park are located within the project study area.

The San Bernardino County Museum is located in the City of Redlands within 0.25 miles of the 66 kV subtransmission lines in Segment 1. The museum is a regional museum with exhibits and collections in cultural and natural history.

Also located within the project study area in Segments 1 and 2 are on-street bike lanes on Barton Road and Mountain View Avenue. These bike lanes/routes are maintained by the City of Loma Linda. An estimated 1.25 miles of the Lillian V. Miller Memorial Trail (also known as the Edison Easement Trail) is located within the existing WOD corridor in Segment 1. This Class I (off-road) trail consists of paved and earthen surface trails, benches, and drinking fountains.

Segment 1 includes on-street bike lanes within the existing WOD corridor on San Bernardino Avenue in the City of San Bernardino. A portion of the Santa Ana River Trail is located within the project study area. The Santa Ana River Trail and Parkway is overseen by a Policy Advisory Group of elected officials and representatives of nonprofit organizations. Currently, the Policy Advisory Group includes the mayors of the cities of Anaheim, Corona, Redlands, Riverside, and San Bernardino; supervisors from the counties of Orange, Riverside, and San Bernardino; a commissioner from the Santa Ana Watershed Project Authority; and a member of The Wildlands Conservancy. Operations and maintenance of the Santa Ana River Trail is undertaken by a combination of city and county park departments, including the Riverside County Regional Parks and Open Space District, the San Bernardino County Regional Parks Division, and the parks departments of the cities of Redlands and San Bernardino (SCE, 2014).

Additional recreation areas located further from the Proposed Project include the Santa Ana River Wash ACEC, located approximately 2.9 miles northeast of San Bernardino Substation. The ACEC encompasses 750 acres of BLM land north of Redlands.

D.15.1.2.2 Segment 2: Colton and Loma Linda

The Colton to Loma Linda segment would traverse approximately 2.7 miles of open space in the City of Loma Linda and approximately 0.6 miles of open space in the City of Colton, both used for recreation. A number of riding and hiking trails are located within this open space. On-street bike lanes on Barton Road and the Mt. Vernon Bike Lane (Mt. Vernon Avenue) are located within the Proposed Project boundaries in the City of Grand Terrace. These bike lanes/trails are maintained by the City of Grand Terrace.

The City of Loma Linda adopted a riding and hiking trail plan in 1973, which includes the SCE easement and provides access to the trail system in the Badlands area (Loma Linda, 2009). The riding and hiking trail system is accessed via Mountain View Avenue, Richardson Street, and Oakwood Drive in the City of Loma Linda.

The Rancho Mediterrania and Grand Terrace Senior Center Parks are located within Segment 2. The Rancho Mediterrania Park is an approximately 4-acre privately maintained park in the City of Colton consisting of a clubhouse, pool, and tot lot for the mobile home park. Approximately 0.04 acres of the park is located within the existing WOD corridor in Segment 2, and approximately 2.82 acres of the park are located within 500 feet of the Proposed Project boundaries in Segment 2 (SCE, 2014). These parks are described in Table D.15-1 and shown on Figure D.15-1b.

The City of Grand Terrace operates the Grand Terrace Senior Center and Park. The Grand Terrace Senior Center provides a full spectrum of services and activities for seniors. The park offers seating areas, walking paths, monuments, gardens, and direct access into the senior center. The Senior Center and Park are located within 500 feet of the Proposed Project boundaries (SCE, 2014).

The South Hills Preserve is located in Segments 2 and 3 and would be crossed by the Proposed Project. The South Hills Preserve is almost 2,000 acres of protected open space. Conservation of the hillside and maximizing the preservation of natural open space are part of Loma Linda's long-range plan for the South Hills area (Loma Linda, 2009). South Hills is open to pedestrians, bicycles, and horses.

D.15.1.2.3 Segment 3: San Timoteo Canyon

Segment 3 would cross three large recreation areas and one smaller private recreation facility. These are described in Table D.15-1 and shown on Figures D.15-1c and D.15-1d. The California State Park, San Timoteo Canyon, is an ancient river valley that runs from south of the City of Banning in Riverside County to a point just south of the City of San Bernardino in San Bernardino County. In 2001, a portion of the canyon came under management of the California State Parks with the intent to provide hiking trails, horse riding trails, camping, and historic sites. Due to budget constraints, California State Parks has not prepared a Management Plan for San Timoteo Canyon State Park, and no opening date has been set. Approximately 37.5 acres of San Timoteo Canyon State Park are within the existing WOD corridor in Segment 3, 102 acres are within 500 feet of the boundaries of the Proposed Project in Segment 3, and 294 acres are within 0.25 miles of the existing WOD corridor in Segment 3 (SCE, 2013).

The El Casco Lake is a reservoir located 3.2 miles from Calimesa in Riverside County. The 15-acre lake, owned by the Riverside Land Conservancy, is among approximately 8,000 acres of publicly owned land in San Timoteo Canyon. El Casco Lake offers fishing activities but is not currently open to the public. In January 2013, the Riverside County Regional Park and Open-Space District Advisory Commission approved a memorandum of understanding between the Park District and the Riverside Land Conservancy "to work cooperatively to develop and further the concept and ideas for El Casco Regional Park." Approximately 1.63 acres of the lake are located within 500 feet of the existing WOD corridor in Segment 3, and approximately 19 acres are located within the project study area in Segment 3 (SCE, 2013).

The Norton Younglove Preserve/reserve, located west of the City of Beaumont in Riverside County, consists of an extensive pattern of dramatic and rugged mountainous terrain. The Preserve/reserve includes grasslands, riparian, and woodland habitat areas and serves as a wildlife corridor. The Riverside County Regional Park and Open-Space District presently manages the Preserve/reserve. There are ongoing discussions between the County of Riverside and the State of California Department of Parks and Recreation regarding the possible transfer of the property into the San Timoteo Canyon State Park. Approximately 66 acres of the Preserve/reserve are located within the existing WOD corridor in Segments 3 and 4, approximately 295 acres of the Preserve/reserve are located within 500 feet of the Proposed Project boundaries in Segments 3 and 4, and approximately 588 acres are located within 0.25 miles of the Proposed Project boundaries in Segments 3 and 4 (SCE, 2013).

One privately owned recreational facility is located within 0.25 miles of the ROW in of Segment 3. Halo Resorts owns and maintains campgrounds that offer recreational vehicle (RV) sites with full hook-ups, dedicated tent sites, cabin rentals, and scheduled activities (e.g., fishing).

D.15.1.2.4 Segment 4: Beaumont and Banning

Segment 4 recreation facilities are described in Table D.15-1 and shown on Figures D.15-1d through D.15-1f. Within the Beaumont and Banning segment, the City of Beaumont operates the Trevino Community Park, Albert A. Chatigny Senior Center, Oak Valley Park, Stewart Park, and Stetson Community Park. A portion of some of the parks is located within the Proposed Project ROW:

- Stetson Community Park is approximately 9 acres and offers open space and trails. The entire park is located within the Proposed Project ROW boundaries.
- Noble Creek Regional Park is located in the City of Beaumont, but it is operated by the Beaumont-Cherry Valley Recreation and Park District. Approximately 7 acres of Noble Creek Regional Park are located within the existing WOD corridor in Segment 4, 24.6 acres are within 500 feet of the Proposed Project boundaries, and 53.2 acres are within 0.25 miles of the Proposed Project boundaries (SCE, 2013).
- Cherry Valley Lakes RV Campground is a privately owned and maintained campground within unincorporated Riverside County. A portion of the campground is located within the existing WOD corridor in Segment 4.
- Oak Valley Park is approximately 13 acres and offers open space, trails, and disc golf facilities. Most of Oak Valley Park (11.62 acres) is located within the Proposed Project Corridor and the entire park is located within 500 feet of the Proposed Project boundaries.

The City of Beaumont maintains an on-street bike route on Palmer Avenue, which is located within the Proposed Project boundaries in Segment 4. In addition, off-street (Class I) bikeways and trails are maintained by the City of Beaumont on the west side of Beaumont Avenue, parallel to a drainage ditch between Cougar Way and Beaumont Avenue, between Cherry Avenue and Starlight Avenue, and within the Southern California Edison (SCE) corridor between Cherry Avenue and Beaumont Avenue.

Additionally, two golf courses are partially located within the corridor. The Oak Valley Golf Club is a private 18-hole golf course and the Morongo Golf Club at Tukwet Canyon is a private golf course offering 36 holes; portions of both clubs are within the 0.5-mile wide study corridor, and the ROW passes through the Oak Valley Golf Club. Caltrans maintains a rest area along Interstate 10 (I-10) within the Segment 4 project study area. The rest area (referred to as Wildwood rest area) located on the north side of I-10 south of the Brookside Avenue bridge (in the City of Calimesa) features open green space and restrooms.

In addition to the local and regional parks within 0.25 miles of the ROW, the route would travel south of the San Bernardino National Forest and north of Gilman Historic Ranch. The Potrero ACEC would be located further south of the Proposed Project.

- **San Bernardino National Forest (SBNF).** The SBNF was established in 1907 and is managed by the USFS. The SBNF is located both north and south of I-10, and the Banning and Beaumont segment would travel within 1 mile of the northern portion of the SBNF. Recreational activities at the SBNF include hiking, camping, OHV use, skiing, fishing, and horseback riding (USDA Forest Service, no date).
- **Gilman Historic Ranch and Wagon Museum.** The Gilman Historic Ranch and Wagon Museum provides visitors with an interpretation of the history of California from the Cahuilla Indians to the exploration

and settlement of southern California. Recreational facilities include the Gilman homestead ranch in addition to historical and educational programs that attract visitors (Riverside County Parks, 2014).

The other recreational area that is located in the vicinity of the Banning and Beaumont segment, but is further than 1 mile away, is the Potrero ACEC (located 3 miles south of the Proposed Project and accessed from Highland Springs Ave.). The Potrero ACEC is located within the Western Riverside County Multiple Species Habitat Conservation Plan and is managed by the BLM.

D.15.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

The only designated recreation facilities within Segment 5 is the Roosevelt Williams Park (formerly called Pass Valley Park). This park is located on approximately 6.3 acres within the City of Banning and is shown on Figure D.15-1g.

D.15.1.2.6 Segment 6: Whitewater and Devers

Recreation opportunities in the Whitewater and Devers segment are listed in Table D.15-1 and shown on Figure D.15-1j. Most of the recreation opportunities in Segment 6 are located on BLM managed land. The BLM manages 15.2 million acres of public lands in California, nearly 15 percent of the State's land area. Approximately 381 acres of BLM land are located within 0.25 miles of the existing WOD corridor in Segment 6. Approximately 283 acres are within 500 feet of the project study area and approximately 53 acres are within the boundaries of the Proposed Project. The Proposed Project does not cross special recreation management areas or Areas of Critical Environmental Concern.

A portion of the Pacific Crest National Scenic Trail (PCT) is partially located on BLM land and crosses the existing WOD corridor in Segment 6 west of the City of Palm Springs. The PCT is a long-distance mountain hiking and equestrian trail closely aligned with the highest portions of the Sierra Nevada and Cascade Mountain Ranges. The trail's southern terminus is on the United States border with Mexico and its northern terminus is in British Columbia, Canada. Its corridor through the United States is in the states of California, Oregon, and Washington. The BLM manages 180 miles of the Pacific Crest National Trail, primarily in the southern half of California.

The Caltrans rest area located near Exit 113 (referred to as Whitewater rest area) features restrooms, picnic areas, and phones, and is located within 0.25 miles of the access roads in Segment 6. This rest area is partially in the City of Palm Springs and partially in the County of Riverside.

Additional recreation areas located further from the Proposed Project include the Whitewater Canyon Area of Critical Environmental Concern, the San Gorgonio wilderness area to the north, the Santa Rosa and San Jacinto Mountains National Monument and the San Jacinto wilderness area to the south and the SBNF to the north and south. Some additional information is provided below.

- **Whitewater Canyon Area of Critical Environmental Concern.** The 16,381-acre Whitewater Canyon ACEC is located less than 0.5 miles north of the Proposed Project. This resource area is managed by the BLM, California Desert District and is designated for its wildlife habitat and Native American values (BLM, 1999).
- **Santa Rosa and San Jacinto Mountains National Monument.** The monument is located 0.6 miles south of the ROW and is accessed from Highway 111 or Highway 243.

D.15.1.3 Environmental Setting for Connected Actions

The connected actions identified in Table B-22 (see Section B.7.1) would require a total of approximately 10,560 acres for solar generation development in the Desert Center and the Blythe areas.

Desert Center Area. Connected action projects in the Desert Center area include the proposed Palen Solar Power Project and the proposed Desert Harvest Project, both of which would be on BLM-administered land, as well as approximately 2,400 acres of other solar PV development in the area. This region of the Colorado Desert is located within the relatively flat Chuckwalla Valley. The area is generally undeveloped with the exception of a recently completed solar project and high-voltage transmission lines that cross the area.

The majority of the area's developed recreation sites are managed by BLM and the National Park Service. The Desert Center area does not include any state, regional, or community parks. Recreational use of BLM lands in the Desert Center area is limited primarily to cooler months (i.e., September through May), and the number of visitors is estimated to be approximately 2,000 to 3,000 per year (BLM, 2013). Dispersed recreation on BLM-administered lands includes camping, hiking, hunting, and OHV use on designated routes (BLM, 2012). Recreational resources in the Desert Center area include the following:

- ACECs: Chuckwalla Desert Wildlife Management Area, Palen Dry Lakes, Corn Springs, Alligator Rock, Desert Lily Preserve, and Chuckwalla Valley Dune Thicket;
- Wilderness areas: Palen-McCoy, Chuckwalla Mountains, Little Chuckwalla Mountains, Ornocopia Mountains, Sheephole Valley, and Joshua Tree;
- Joshua Tree National Park;
- Bradshaw Trail National Back Country Byway;
- Edmund C. Jaeger Nature Sanctuary;
- General Patton Museum at Chiriaco Summit;
- Corn Springs Campground (BLM-managed);
- Lake Tamarisk Desert Resort (member-owned community for seniors) (BLM, 2013); and
- Former Desert Center Airport (members-only automotive racetrack) (BLM, 2012).

Blythe Area. The connected projects in the Blythe area would involve approximately 4,200 acres for solar PV developments. Recreation areas in this area include BLM-managed resources, recreation facilities operated by the Riverside County Regional Park and Open-Space District, City of Blythe parks and recreation areas, and privately owned motor vehicle parks and campgrounds. Dispersed recreation on BLM-administered lands is limited to cooler months (i.e., September through May) and includes backpacking, camping, hiking, horseback riding, rockhounding, photography and painting, rock climbing, spelunking, hunting (e.g., dove, quail, deer), landsailing on dry lakes, mountain and trail biking, observing cultural resources, and OHV use on designated routes (POWER Engineers, 2014).

Specific recreational resources in the Blythe Area include the following:

- ACECs: Mule Mountains and Big Marias (number of annual visitors to these ACECs is estimated to be approximately 100);
- Wilderness areas: Palo Verde Mountains, Rice Valley, Big Maria Mountains, and Riverside Mountains (the number of annual visitors to these wilderness areas is estimated to be approximately 100 to 200 hikers, while motor vehicle camping near the wilderness areas accounts for up to 2,000 annual visitors);

- BLM-managed camping facilities: Mule Mountain Long Term Visitor Area (LTVA), Midland LTVA, Wiley's Well Campground, and Coon Hollow Campground;
- Bradshaw Trail National Back Country Byway (65-mile route that begins 35 miles southeast of Indio and ends 15 miles southwest of Blythe; and
- Cibola National Wildlife Refuge (managed by U.S. Fish and Wildlife Service).

D.15.2 Applicable Regulations, Plans, and Standards

The Proposed Project would traverse federal, state, and local jurisdictions that have implemented management plans for recreational resources. To determine the Proposed Project's consistency with these government plans and policies, a thorough review of applicable policies was conducted.

D.15.2.1 Federal

Federal Land Policy and Management Act

Congress established the Federal Land Policy and Management Act (FLPMA) in 1976 to provide for the management, protection, development, and enhancement of public lands. FLPMA requires public lands be provided for multiple objectives including to provide for outdoor recreation and human use. Sections 201 and 202 of this act established BLM land use planning requirements. Land use plans and planning decisions are the basis for every on-the-ground action the BLM undertakes.

The BLM has exclusive jurisdiction of ROWs on BLM public lands in the Proposed Project area. Public lands have inherent recreational value and offer varying opportunities for recreational activities. The Proposed Project corridor is located within the Palm Springs–South Coast Resource Management Plan area (1994). This plan is in the process of being updated. The BLM published a Draft South Coast Resource Management Plan and Environmental Impact Statement in 2011. The Final EIS is scheduled to be released later in 2015. It has not yet been adopted.

In addition, the Proposed Project would be located within the California Desert Conservation Area Plan of 1980, as amended. The purpose of the CDCA designation is "to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality" (43 U.S.C. 1781[b]).

There are no BLM-designated or proposed special recreation management areas or extensive recreation management areas within the Proposed Project limits.

Recreation and Public Purposes Act

The Recreation and Public Purposes Act is administered by the BLM. The act authorizes the sale or lease of public lands for recreational or public purposes to state and local governments and to qualified nonprofit organizations. Examples of typical uses on lands subject to the Act are historic monument sites, campgrounds, schools, fire houses, law enforcement facilities, municipal facilities, landfills, hospitals, parks, and fairgrounds.

Comprehensive Management Plan for the Pacific Crest National Scenic Trail

The PCT is one of the original National Scenic Trails established by Congress in 1968. It is administered by the USFS in partnership with the BLM, National Park Service, California State Parks, and the Pacific Crest

Trail Association. The Comprehensive Management Plan for the Pacific Crest National Scenic Trail (1982) provides overall guidance for the development, management and use of the trail. The Proposed Project would cross the PCT in Segment 6, west of Whitewater Canyon.

D.15.2.2 State

The Proposed Project crosses the San Timoteo Canyon State Park. As noted above, due to budget constraints, California State Parks has not prepared a Management Plan for the park so there are no applicable plans or standards at this time.

D.15.2.3 Local

The CPUC has jurisdiction over the siting and design of the Proposed Project because it authorizes the construction of investor-owned public utility (IOU) facilities. General Order (GO) No. 131-D Section III.C requires "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits." Appendix 9 (Policy Screening Report) identifies county and city plans and policies regarding recreation and other resources of concern to planners. The Appendix indicates policies that are potentially applicable to the Proposed Project and whether the project would be consistent with the plan or policy. These policies are numerous and are not repeated here.

D.15.3 Environmental Impacts of the Proposed Project

D.15.3.1 Approach to Impact Assessment

This section considers the potential impact to and disruption of recreational resources from implementing the Proposed Project. Loss of recreational resources is anticipated to be minor as the project is located primarily in an already existing corridor and the line would replace existing structures. However, as portions of the corridor are currently used for recreation, temporary impacts to recreation are likely to occur during construction when the recreation areas would be temporarily unavailable to the nearby users or when a nearby recreation area would be affected by indirect impacts. The metrics used to compare alternatives would be the number of recreational resources directly and indirectly impacted by the alternative and the length of time of the direct and indirect impact, in particular, the length of closure time during construction of the project for each recreational resource, if necessary.

D.15.3.1.1 Applicant Proposed Measures

Table D.15-2 presents the Applicant Proposed Measures that SCE has committed to implementing during construction and operation of the Proposed Project. If revision or expansion of any APM is found to be required based on the analysis in this EIS, those changes are explained in Section D.15.3.3 (Impact Analysis).

Table D.15-2. Applicant Proposed Measures for Recreation

APM	Description
APM REC-1	SCE would coordinate temporary closures with recreational facility managers and would post a public notice at recreation facilities indicating that the facilities would be closed or have limited use during construction.
APM REC-2	SCE would prepare a construction notification plan identifying procedures for notifying the public of the location and duration of construction.

D.15.3.2 Impact Criteria

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). Using the following criteria from previous transmission projects, it is known that the Proposed Project could result in impacts to recreation if it would:

- Directly or indirectly disrupt activities in established recreation areas and reduce access or visitation.
- Substantially reduce the scenic, biological, cultural, geologic, or other important factors that contribute to the value of recreational facilities or areas.

D.15.3.3 Impacts and Mitigation Measures

Impact R-1: Construction activities would temporarily reduce access and visitation to recreation areas.

Construction activities for the Proposed Project are anticipated to occur between May 2016 and May 2020. This would require establishing temporary staging yards used as reporting locations for workers, vehicle and equipment parking, and material storage, modification of existing substations, rehabilitation and construction of new access and spur roads, preparation of laydown/work areas for the new structure pad locations, grading and clearing of vegetation for each structure pad location, foundation installation for each pole, and installation of the new structures.

Construction of the Proposed Project would require the use of temporary shoo-fly facilities. A shoo-fly is a temporary electrical line on temporary poles that is used during construction to maintain electrical service to the area while allowing portions of a permanent line to be taken out of service temporarily. The shoo-fly facilities would be removed after work on the permanent line is completed.

The Proposed Project would also require permanent relocation of portions of existing 66 kV and 12 kV lines and upgrades to existing telecommunications. Some of the relocation of the 12 kV circuits and telecommunication facilities would include underground systems.

Project construction activities create a number of temporary disturbances that would diminish the value of affected areas, such as bike lanes, parks, golf clubs, and open space/preserves. The noise, dust, and traffic generated during construction would negatively affect a visitor's enjoyment of these recreation areas so recreationists may be less likely to visit these resources during project construction.

In certain instances, for reasons of safety, access to some areas or facilities might be temporarily prohibited. Some specific recreation locations would experience direct impacts and closures during construction. These include those listed below (also see the full list of recreation areas within the ROW in Section D.15.1.2 and Table D.15-1):

- Rancho Mediterrania Park (parking lot)
- South Hills Preserve (open space)
- Lillian V. Miller Memorial Trail (trail within ROW)
- Rest areas (restroom and parking)
- Stetson Community Park (Grass areas and paved pathways)
- Noble Creek Regional Park (dirt and paved parking, baseball field and spectator seating)
- Trevino Community Park (paved walkway)
- Bike lane on Barton Road, Beaumont Avenue, Drainage and SCE Corridor Class I path, Cherry Avenue
- Norton Younglove Preserve (open space and trails)

- San Timoteo Canyon State Park (open space and trails)
- Cherry Valley Lakes RV Campground (10 RV sites and much of RV parking and storage area)
- Oak Valley Golf Club and Park (grass areas outside fairways and dirt pathways)
- Pacific Crest Trail (trail)

These trails, parks, and bike lanes are directly within the ROW. The facilities would be off limits to the public during active construction at transmission structure sites, which could last up to eight weeks. In addition, the entire ROW corridor would be temporarily closed during conductor stringing activities, which would be intermittent, with the total cumulative closure duration no more than two weeks (SCE, 2014; Data Response REC-3). For the bike lane closure along Palmer Avenue, SCE has stated that the closure would be no more than 72 hours (SCE, 2014; Data Response REC-3).

Through implementation of APM REC-1 and REC-2, SCE has committed to coordinating closures with recreational facility managers and posting information about the closures but has not provided any additional information regarding the timing of such coordination or provided any notification regarding alternative recreational facilities available during construction. Without appropriate schedule information and alternative recreation options, direct and indirect effects to recreational users and loss of recreational facilities would result in a substantial impact. Mitigation Measures R-1a (Coordinate construction schedule and activities with a representative for the recreation area) and R-1b (Coordinate with local agencies to identify alternative recreation areas) would be required to reduce these impacts, and would ensure that recreational users are informed of scheduled construction activities and informed of alternative areas for use. These mitigations measures supersede APMs REC-1 and REC-2.

The Proposed Project would cross the PCT as the trail traverses unincorporated Riverside County land north of the Santa Rosa and San Jacinto Mountains National Monument. As described in Section D.15.3.1, the PCT was designated as one of the first scenic trails in the National Trails System, and is limited to non-mechanized means of travel. For the PCT closure, SCE has stated that the closure would be no more than 72 hours (SCE, 2014; Data Response REC-3). The presence of construction equipment and anticipated construction work would negatively affect users of the trail and construction would require temporary closure of the trail. In order to allow for continued use of the trail, Mitigation Measure R-1c (Provide a temporary detour for Pacific Crest National Scenic Trail users) is recommended. Implementation of this mitigation measure would allow recreationists to use the trail during construction, and would inform visitors of scheduled construction activities and would reduce impacts to PCT users to the extent feasible.

The Proposed Project would be constructed across approximately 66 acres of the Norton Younglove reserve within the Calimesa and San Timoteo Canyon segment. Project construction activities would create a number of temporary conditions that would diminish the value of the visitor experience at the Norton Younglove reserve. For example, the noise, dust, and construction traffic generated during construction activities could negatively affect a visitor's enjoyment of this recreation area. Recreationists may be less likely to visit this resource during project construction. The location of construction equipment may also temporarily preclude access to some areas. Such a disturbance to recreational activities or a reduction in the visitation to the reserve due to construction activities would result in a substantial effect. Construction-related impacts to the Norton Younglove reserve would be mitigated through implementation of Mitigation Measure R-1a (Coordinate construction schedule and activities with a representative for the recreation area). Implementation of this mitigation measure would minimize impacts to recreationists at the Norton Younglove reserve, and would ensure that recreational users are informed of scheduled construction activities.

Mitigation Measures for Impact R-1: Construction activities would temporarily reduce access and visitation to recreation areas

R-1a **Coordinate construction schedule and activities with a representative for the recreation area.** No less than 30 days prior to construction that would affect recreation areas, SCE shall coordinate construction activities and the project construction schedule with a representative of the recreation areas listed below. SCE shall use best efforts to schedule construction activities to avoid heavy recreational use periods, including major holidays, in coordination with the representative. If SCE is unable to accommodate this avoidance, it will notify the CPUC and BLM as to the dates and reasons they are not able to comply. SCE shall locate construction equipment to avoid temporary preclusion of recreation area use whenever feasible per the recommendations of the representative. SCE shall also prepare a public notice of construction activities consistent with Mitigation Measure LU-1a (Prepare Construction Notification Plan). SCE shall document its coordination efforts with the representative, and provide this documentation to the CPUC and the BLM 30 days prior to construction.

- Rancho Mediterrania Park
- South Hills Preserve
- Lillian V. Miller Memorial Trail
- Rest areas
- Stetson Community Park
- Noble Creek Regional Park
- Trevino Community Park
- Bike lane on Barton Road, Beaumont Avenue, Drainage and SCE Corridor Class I path, Cherry Avenue
- Norton Younglove Preserve
- San Timoteo Canyon State Park
- Cherry Valley Lakes RV Campground
- Oak Valley Golf Club and Park
- Pacific Crest Trail

R-1b **Coordinate with local agencies to identify alternative recreation areas.** SCE shall coordinate with the local parks and recreation departments regarding construction activities at the park and recreation facilities listed in R-1a, in order to identify alternative recreation sites that may be used by the public. SCE shall post a public notice at recreation facilities to be closed or have limited access during construction consistent with Mitigation Measure LU-1a (Prepare Construction Notification Plan) as allowed by the facility representative and identify any alternative recreation sites. SCE shall document its coordination with the parks and recreation departments and shall submit this documentation to the CPUC and the BLM 30 days prior to initiating project construction.

R-1c **Provide a temporary detour for Pacific Crest National Scenic Trail users.** No less than 60 days prior to construction affecting the PCT, SCE shall coordinate with the USFS to establish a temporary detour of the trail during trail closure to avoid hazardous construction areas. SCE shall prepare a public notice of the temporary trail closure and information on the trail detour consistent with Mitigation Measure L-1a (Prepare Construction Notification Plan). SCE shall document its coordination efforts with the UFSF and submit this documentation to the CPUC and the BLM 30 days prior to construction.

Impact R-2: Presence of a transmission line or substation would change the character of a recreation area, diminishing its recreational value

The Proposed Project would replace two existing single-circuit transmission lines and one existing double-circuit transmission line with two double-circuit transmission lines. Project activities would occur within an existing ROW. The proposed double-circuit structures would be greater in height than the single-circuit structures, and as such the Proposed Project would alter the viewshed along the ROW (see Section D.18.3, Visual Resources). However, the number of transmission lines that would traverse the recreational areas would decrease, allowing additional space for recreation.

At its crossing of the PCT, the Proposed Project would remove two existing single-circuit 220 kV structures and one existing double-circuit 220 kV structure and construct new double-circuit 220 kV structures. The nearest proposed transmission structure would include one double-circuit structure an estimated 190 feet east of the trail. The nearest existing structure to the PCT is an estimated 280 feet west of the line. All other structures would be over 350 feet from the trail. The Proposed Project would therefore place one structure almost 100 feet closer to the PCT than previously sited. In addition, the PCT is located within a proposed stringing site, would be an estimated 180 feet from a shoofly work area, and would be less than 50 feet from a temporary disturbance area. While this structure would be slightly more noticeable, overall, there would be no increase in the total amount of industrial development across the recreational areas as a result of project activities. Consequently, development and operation of the Proposed Project would not significantly change the character of the recreation area. No mitigation is required.

Impact R-3: Presence of a transmission line would permanently preclude recreational activities

Recreational resources that are located in the vicinity of the ROW would potentially be affected by the removal of three existing transmission lines and siting of two new transmission lines. For example, the construction of proposed transmission structures would place a structure closer to the Pacific Crest Trail than currently located. However, this would not preclude or prevent use of the recreational uses. The siting of new structures adjacent to existing structures would avoid the creation of new barriers to recreational uses and would reduce barriers to recreational activities in the long term by reducing the number of transmission structures overall. As such, the Proposed Project would not permanently preclude recreational activities and no mitigation is required.

D.15.3.4 Impacts of Connected Actions

Impact R-1: Construction activities would temporarily reduce access and visitation to recreation areas

Desert Center Area. This area is characterized by dispersed recreational opportunities on BLM-administered land. Construction of the connected actions (i.e., Palen Solar Power Project; Desert Harvest Project; and 2,400 acres of other solar PV development) across BLM-managed areas would require the agency's review and approval, and direct conflicts with temporary access to recreational resources could only occur at the discretion of the BLM. To ensure that recreation impacts are minimized to the extent feasible, measures similar to Mitigation Measure R-1b (Coordinate with local agencies to identify alternative recreation areas) would need to be implemented in the event that construction activities require a temporary preclusion of a recreational resource or facility.

While the location of construction activities may not interfere with public access to recreation areas, construction would create indirect impacts from noise, fugitive dust, vehicle movement, and nighttime lighting. These nuisance impacts may affect visitation at the many ACECs, wilderness areas, and other recreational resources in the region. Construction-related impacts would be mitigated through implementation of measures similar to Mitigation Measure R-1a (Coordinate construction schedule and activities with a representative for the recreation area), which would ensure that recreational users are informed of scheduled construction activities.

Blythe Area. This area includes many regional, city, and private recreational facilities, as well as resources that are managed by the BLM and the U.S. Fish and Wildlife Service. Recreation areas that are privately owned or managed by local jurisdictions are located near residential areas or along the Colorado River.

As the connected actions (i.e., 4,200 acres of solar PV development) would interconnect with the Colorado River Substation, the construction of these actions is not expected to preclude the use of these regional, city, or private recreational facilities. In contrast, BLM-managed recreation areas include developed facilities (e.g., campgrounds) and protected areas (e.g., ACECs and wilderness areas) that are dispersed throughout the Blythe area. Any construction of solar generation on or across BLM-managed areas would require the agency's review and approval, and direct conflicts with temporary access to recreational resources could only occur at the discretion of the BLM. To ensure that recreation impacts are minimized to the extent feasible, measures such as Mitigation Measure R-1b (Coordinate with local agencies to identify alternative recreation areas) would need to be implemented in the event that construction activities require a temporary preclusion of the use of a recreational resource or facility.

While the location of construction activities may not interfere with public access to recreation areas, construction would create indirect impacts from noise, fugitive dust, vehicle movement, and nighttime lighting that may affect visitation at the recreational resources in the region. Construction-related impacts would be mitigated through implementation of measures such as Mitigation Measure R-1a (Coordinate construction schedule and activities with a representative for the recreation area), which would ensure that recreational users are informed of scheduled construction activities.

Construction workers may use both the Mule Mountain LTVA and the Midland LTVA as a source of temporary housing. Depending on the number of construction workers seeking housing, use of these LTVAs during construction of solar generation projects would limit the public's access to long-term camping facilities. Given that each LTVA can accommodate several hundred camping vehicles, it is unlikely that recreational use of the LTVA would be restricted. Additionally, LTVAs provide a limited opportunity for employee housing as they require the use of self-contained camping vehicles, and are closed from April 16 to September 14 (POWER Engineers, 2014). Seasonal or vacation home rentals would serve as an alternative to temporary, affordable housing in the Blythe Area (POWER Engineers, 2014).

Impact R-2: Presence of project facilities would change the character of a recreation area, diminishing its recreational value

Desert Center Area. This region includes many recreation areas (e.g., ACECs, wilderness areas, and Joshua Tree National Park) that attract visitors for their scenic resources and undeveloped landscapes. Development of the connected actions would be visible from numerous recreational resources, which would alter the recreational experience by introducing energy-related facilities and infrastructure into the area. In order to minimize impacts to the recreational value of these resources to the extent feasible, mitigation measures such as those required for visual resources would need to be implemented.

Blythe Area. Similar to Desert Center, the Blythe area includes many recreation areas (e.g., ACECs and wilderness areas) that attract visitors for their scenic resources and undeveloped landscapes. It also includes the Colorado River. The connected solar projects could be visible from numerous recreational resources, which would alter the recreational experience by introducing energy infrastructure into these areas. In order to minimize impacts to the recreational value of these resources to the extent feasible, mitigation measures such as those required for visual resources would need to be implemented.

Impact R-3: Presence of project facilities would permanently preclude recreational activities

None of the connected actions are expected to limit or preclude access to regional, city, and private recreational facilities within the Desert Center or the Blythe areas. BLM-managed recreational opportunities are dispersed across these areas. Any construction of solar generation on BLM lands would require the agency's review and approval, and direct conflicts with access to recreational resources could be limited by requirements imposed by BLM.

D.15.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.15.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Recreational resources within the ROW are described by segment in Section D.15.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.15.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Three impacts related to recreation were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.15.3.3.

Impact R-1: Construction activities would temporarily reduce access and visitation to recreation areas

Like the Proposed Project structures, several of the relocated towers would be located near or on recreational facilities. Construction of this alternative would result in temporary disturbances from noise, dust, and traffic that would diminish the value of nearby recreational facilities. In addition, five facilities would be directly affected by construction of the relocated towers, including: Stetson Community Park, Oak Valley Golf Course, Oak Valley Park, SCE Corridor Class I Path, and Cherry Avenue Class I Path. Direct impacts to these five facilities would include closure of the facilities, which would be off limits to the public during active construction at transmission structure sites. Although these same five facilities would be directly affected by construction of the Proposed Project, the direct adverse effects under this alternative would be greater due to the extended construction timeframe for this alternative, which would be up to one year longer than the Proposed Project. Also, indirect adverse effects to nearby recreational facilities would be similarly greater due to the extended construction timeframe.

The severity of this adverse effect would be reduced through implementation of Mitigation Measures R-1a (Coordinate construction schedule and activities with a representative for the recreation area) and R-1b (Coordinate with local agencies to identify alternative recreation areas). Implementation of these mitigation measures would ensure that the potential adverse effects related to disruption of recreational access or visitation under this alternative would be minor.

Impact R-2: Presence of a transmission line or substation would change the character of a recreation area, diminishing its recreational value

Several of the relocated towers would be near to or on recreational facilities, as described above under Impact R-1. The change in the aesthetic quality and landscape character for nearby recreational facilities would be the same in this alternative as in the Proposed Project. Development and operation of this alternative would not substantially change the character of any nearby recreation area. No mitigation is required.

Impact R-3: Presence of a transmission line would permanently preclude recreational activities

The construction of the relocated towers would temporarily disrupt access and visitation to recreation facilities along the ROW. However, the operational presence of these towers would not preclude recreational activities in a manner substantially different than baseline conditions, nor would the relocated towers preclude recreational activities in a more substantial manner than would the Proposed Project. No mitigation is required.

D.15.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Three impacts were identified under the Proposed Project for recreation. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.15.3.3.

Impact R-1: Construction activities would temporarily reduce access and visitation to recreation areas

The underground subtransmission line portion of this alternative is not located on or within any recreational facilities. The nearest recreational facility, Brookside Park, is located approximately 0.25 miles to the southeast, too far away to have direct impacts.

Impact R-2: Presence of a transmission line or substation would change the character of a recreation area, diminishing its recreational value

The presence of the underground subtransmission line would not change the character of a recreation area or diminish the recreational value of any facility. The location of the underground line would not be visible from any recreational facility, and after construction the line would be located underground and not visible.

Impact R-3: Presence of a transmission line would permanently preclude recreational activities

The presence of the underground subtransmission line would not permanently preclude recreational activities.

D.15.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Three impacts related to recreation were identified for the Proposed Project. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.15.3.3.

Impact R-1: Construction activities would temporarily reduce access and visitation to recreation areas

Construction would require establishing temporary staging yards used as reporting locations for workers, vehicle and equipment parking, and material storage, modification of existing substations, rehabilitation and construction of new access and spur roads, preparation of laydown/work areas for the new structure pad locations, grading and clearing of vegetation for each structure pad location, foundation installation for each pole, and installation of the new structures.

Construction of the Proposed Project or the Phased Build Alternative would require the use of temporary shoo-fly facilities; these would be removed after work on the permanent line is completed.

Construction activities create a number of temporary disturbances that would diminish the value of affected recreation areas, such as bike lanes, parks, golf clubs, and open space/preserves. The noise, dust, and traffic generated during construction would negatively affect a visitor's enjoyment of these recreation areas so recreationists may be less likely to visit these resources during project construction.

In certain instances, for reasons of safety, access to some areas or facilities might be temporarily prohibited. Some specific recreation locations would experience direct impacts and closures during construction. These include those listed below (also see the full list of recreation areas within the ROW in Section D.15.1.2 and Table D.15-1):

- Rancho Mediterrania Park (parking lot)
- South Hills Preserve (open space)
- Lillian V. Miller Memorial Trail (trail within ROW)
- Rest areas (restroom and parking)
- Stetson Community Park (Grass areas and paved pathways)
- Noble Creek Regional Park (dirt and paved parking, baseball field and spectator seating)
- Trevino Community Park (paved walkway)
- Bike lane on Barton Road, Beaumont Avenue, Drainage and SCE Corridor Class I path, Cherry Avenue
- Norton Younglove Preserve (open space and trails)
- San Timoteo Canyon State Park (open space and trails)
- Cherry Valley Lakes RV Campground (10 RV sites and much of RV parking and storage area)
- Oak Valley Golf Club and Park (grass areas outside fairways and dirt pathways)
- Pacific Crest Trail (trail)

These trails, parks, and bike lanes are directly within the ROW. The facilities would be off limits to the public during active construction at transmission structure sites, which could last up to eight weeks. In addition, the entire ROW corridor would be temporarily closed during conductor stringing activities, which would be intermittent, with the total cumulative closure duration no more than two weeks (SCE, 2014; Data Response REC-3). For the bike lane closure along Palmer Avenue, SCE has stated that the closure would be no more than 72 hours (SCE, 2014; Data Response REC-3).

The Proposed Project would cross the PCT as the trail traverses unincorporated Riverside County land north of the Santa Rosa and San Jacinto Mountains National Monument. As described in Section D.15.3.1, the PCT was designated as one of the first scenic trails in the National Trails System, and is limited to non-mechanized means of travel. For the PCT closure, SCE has stated that the closure would be no more than 72 hours (SCE, 2014; Data Response REC-3). The presence of construction equipment and anticipated construction work would negatively affect users of the trail and construction would require temporary closure of the trail. .

The WOD Upgrade project would be constructed across approximately 66 acres of the Norton Younglove reserve within the Calimesa and San Timoteo Canyon segment. Project construction activities would create a number of temporary conditions that would diminish the value of the visitor experience at the Norton Younglove reserve. For example, the noise, dust, and construction traffic generated during construction activities could negatively affect a visitor's enjoyment of this recreation area. Recreationists may be less likely to visit this resource during project construction. The location of construction equipment may also temporarily preclude access to some areas. Such a disturbance to recreational activities or a reduction in the visitation to the reserve due to construction activities would result in a substantial effect.

Like the Proposed Project structures, several of the new and existing reconductored structures would be located near or on recreational facilities. Due to the reduction in construction activities occurring for this alternative, the severity of these disturbances would be reduced compared to the Proposed Project. Recreational facilities that would experience direct impacts are the same as in the Proposed Project, as described in Section D.15.3.3. Direct impacts to these facilities would include closure of the facilities, which would be off limits to the public during active construction at new structure sites and reconductoring at existing structure sites. Direct adverse effects to recreational facilities would be reduced in this alternative compared to the Proposed Project due to the reduction in construction activity.

The severity of this adverse effect would be reduced through implementation of Mitigation Measures R-1a (Coordinate construction schedule and activities with a representative for the recreation area), R-1b (Coordinate with local agencies to identify alternative recreation areas), and R-1c (Provide a temporary detour for Pacific Crest National Scenic Trail users). Implementation of these mitigation measures would ensure that the potential adverse effects related to disruption of recreational access or visitation under this alternative would be minor.

Impact R-2: Presence of a transmission line or substation would change the character of a recreation area, diminishing its recreational value

Several of the new and existing structures in this alternative would be near to or on recreational facilities, as described above under Impact R-1. Similar to the Proposed Project, construction and operation of this alternative would result in two double-circuit 220 kV transmission lines in the West of Devers corridor, which represents a reduction in the number of transmission lines in the corridor compared to baseline conditions. Therefore, changes to the landscape character of nearby recreational facilities (including the Pacific Crest Trail) would be the same in this alternative as in the Proposed Project. Development and operation of this alternative would not substantially change the character of any nearby recreation area. No mitigation is required.

Impact R-3: Presence of a transmission line would permanently preclude recreational activities

Several of the new and existing structures in this alternative would be near to or on recreational facilities, as described above. The construction and reconductoring of these new and existing structures would temporarily disrupt access and visitation to these facilities. However, the operational presence of these towers would not preclude recreational activities in a manner substantially different than baseline conditions, nor would the reconductored towers preclude recreational activities in a more substantial manner than would the Proposed Project. The new and existing reconductored structures would be sited in an existing ROW and neither this alternative nor the Proposed Project would permanently preclude recreational activities. No mitigation is required.

D.15.5 Environmental Impacts of No Action Alternative

D.15.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project

EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

Devers to Beaumont Substation. The 500 kV line between Devers Substation and Beaumont would cross the Pacific Crest National Scenic Trail (PCT) and would pass through the Santa Rosa and San Jacinto Mountains National Monument, the San Bernardino National Forest, and the San Jacinto Wilderness Area. Near the Beaumont Substation the line would traverse by the Potrero ACEC, a designated wildlife habitat managed by the BLM. Users of the public lands through which the corridor passes could be temporarily affected during construction. For example, temporary detours may be required where the line would cross the PCT. Because of the steep terrain through which the transmission ROW passes on federal lands, other direct impacts are not anticipated to occur. Coordinating construction scheduling with public and community facilities would address this impact. In the Devers to Valley segment of DPV2, the EIR/EIS identified that operation of the transmission line would change the character of the recreation and wilderness areas through which it passed, and this was a significant and unavoidable impact.

Beaumont Substation. The substation site is in open grassland and is north of but not adjacent to the Potrero ACEC. It is not expected to affect any recreation resources.

Beaumont to El Casco Substation. Recreational use of open space and conservation habitat in the Norton Younglove Preserve occurs for about 2 miles of the 220 kV corridor, between Highway 60 and El Casco Substation. As with recreational uses elsewhere, there may be temporary restrictions on access during construction. Coordinating construction scheduling with public and community facilities would address this impact.

D.15.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. Construction activities for the No Action Alternative Option 2 would create a number of temporary disturbances that would diminish the value of affected areas, including parks, open space/preserves, and backcountry within the Cleveland National Forest (CNF). The noise, dust, and traffic generated during construction would negatively affect a visitor's enjoyment of these recreation areas such that the public may be less likely to visit these resources during project construction. In certain instances, for reasons of safety, access to some areas or facilities might be temporarily prohibited.

Construction and operation of this alternative would change the character of the recreational areas surrounding the corridor by introducing new transmission structures and conductors. However, the new 500 kV circuit would be built mostly adjacent to an existing circuit and therefore would not substantially alter the character of the recreational areas through which it passes. Recreational resources that are located in the vicinity of the ROW would potentially be affected by the siting of a new transmission line. For example, the construction of proposed transmission structures would place new structures within the Lake Mathews-Estelle Mountain reserve, the Coldwater and Ladd Inventoried Roadless Areas in the CNF, and Weir Canyon Regional Park. However, this would not preclude or prevent use of these recreational areas, except in the immediate areas surrounding construction. The siting of new structures adjacent to existing structures would avoid the creation of new barriers to recreational uses. Coordinating construction scheduling with public and community facilities would reduce the severity of these impacts.

D.15.6 Mitigation Monitoring, Compliance, and Reporting

Table D.15-3 presents the mitigation monitoring program for recreation.

Table D.15-3. Mitigation Monitoring Program – Recreation

MITIGATION MEASURE	**R-1a: Coordinate construction schedule and activities with a representative for the recreation area.** No less than 30 days prior to construction that would affect recreation areas, SCE shall coordinate construction activities and the project construction schedule with a representative of the recreation areas listed below. SCE shall use best efforts to schedule construction activities to avoid heavy recreational use periods, including major holidays, in coordination with the representative. If SCE is unable to accommodate this avoidance, it will notify the CPUC and BLM as to the dates and reasons they are not able to comply. SCE shall schedule construction activities to avoid conflicting with the entirety of a heavy use season, in coordination with the representative. SCE shall locate construction equipment to avoid temporary preclusion of recreation area use whenever feasible per the recommendations of the representative. SCE shall also prepare a public notice of construction activities consistent with Mitigation Measure LU-1a (Prepare Construction Notification Plan). SCE shall document its coordination efforts with the representative, and provide this documentation to the CPUC and the BLM 30 days prior to construction. ▪ Rancho Mediterrania Park ▪ South Hills Preserve ▪ Lillian V. Miller Memorial Trail ▪ Rest areas ▪ Stetson Community Park ▪ Noble Creek Regional Park ▪ Trevino Community Park ▪ Bike lane on Barton Road, Beaumont Avenue, Drainage and SCE Corridor Class I path, Cherry Avenue ▪ Norton Younglove Preserve ▪ San Timoteo Canyon State Park ▪ Cherry Valley Lakes RV Campground ▪ Oak Valley Golf Club and Park ▪ Pacific Crest Trail
Location	In all segments having construction affecting recreation facilities.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE has documented the required coordination.
Effectiveness Criteria	Recreational facility users potentially impacted are informed of construction activities affecting recreational resources.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office, authorized officers of recreation areas.
Timing	30 days prior to construction.
MITIGATION MEASURE	**R-1b: Coordinate with local agencies to identify alternative recreation areas.** SCE shall coordinate with the local parks and recreation departments regarding construction activities at the park and recreation facilities listed in R-1a, in order to identify alternative recreation sites that may be used by the public. SCE shall post a public notice at recreation facilities to be closed or have limited access during construction consistent with Mitigation Measure LU-1a (Prepare Construction Notification Plan) as allowed by the facility representative and identify any alternative recreation sites. SCE shall document its coordination with the parks and recreation departments and shall submit this documentation to the CPUC and the BLM 30 days prior to initiating project construction.
Location	In all segments having construction affecting recreation facilities.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE has documented the required coordination.
Effectiveness Criteria	Recreational facility users potentially impacted are notified of closures and alternative recreation areas.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office, local recreational agencies.

Table D.15-3. Mitigation Monitoring Program – Recreation

Timing	30 days prior to construction.
MITIGATION MEASURE	**R-1c: Provide a temporary detour for Pacific Crest National Scenic Trail users.** No less than 60 days prior to construction affecting the PCT, SCE shall coordinate with the USFS to establish a temporary detour of the trail during trail closure to avoid hazardous construction areas. SCE shall prepare a public notice of the temporary trail closure and information on the trail detour consistent with Mitigation Measure L-1a (Prepare Construction Notification Plan). SCE shall document its coordination efforts with the UFSF and submit this documentation to the CPUC and the BLM 30 days prior to construction.
Location	Pacific Crest National Scenic Trail
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE has documented the required coordination.
Effectiveness Criteria	Detour is provided and marked.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office, USFS.
Timing	60 days prior to construction affecting PCT.

D.15.7 References

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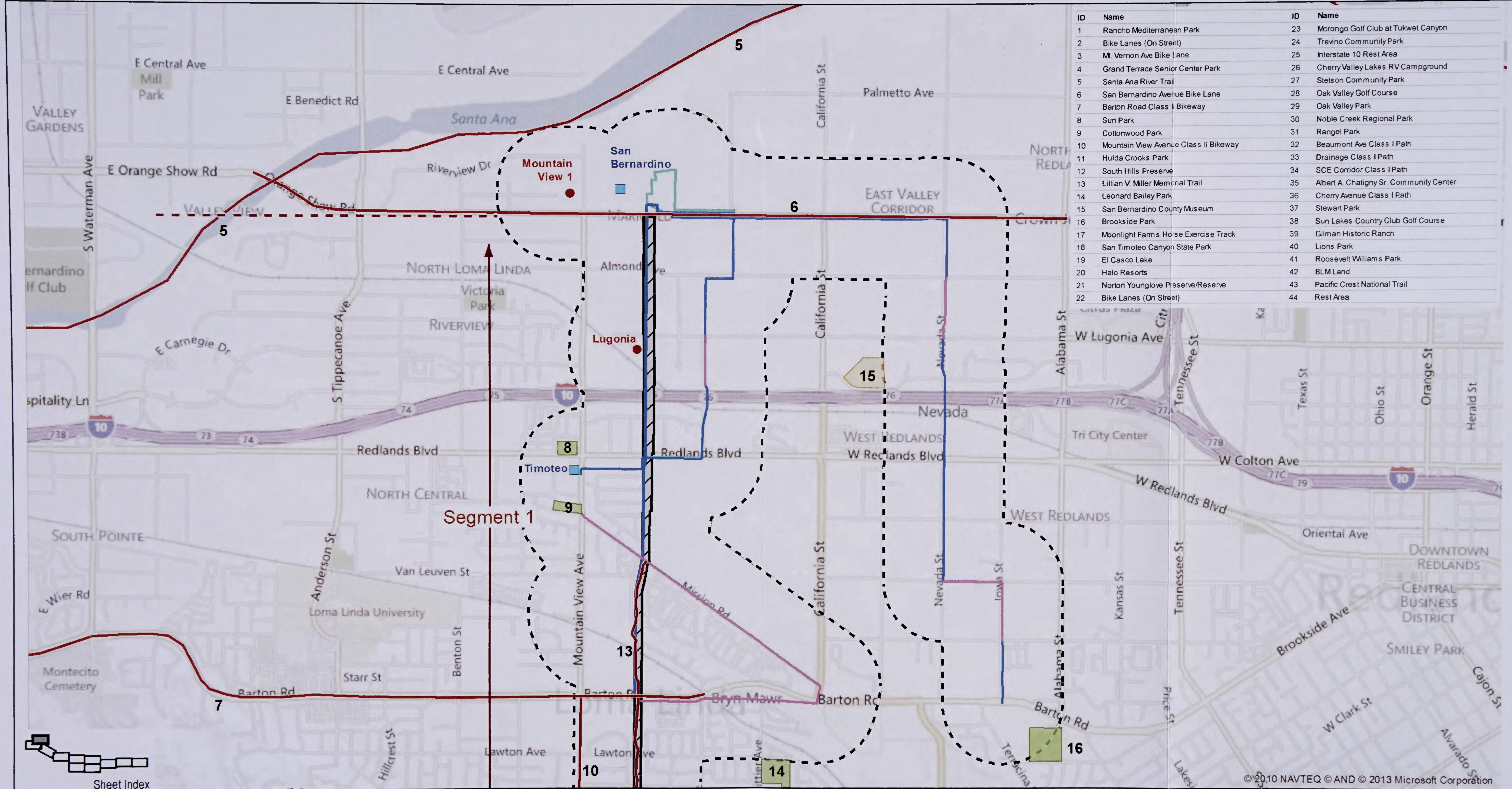


ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
4	Grand Terrace Senior Center Park	26	Cherry Valley Lakes RV Campground
5	Santa Ana River Trail	27	Stetson Community Park
6	San Bernardino Avenue Bike Lane	28	Oak Valley Golf Course
7	Barton Road Class II Bikeway	29	Oak Valley Park
8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
10	Mountain View Avenue Class II Bikeway	32	Beaumont Ave Class I Path
11	Hulda Crooks Park	33	Drainage Class I Path
12	South Hills Preserve	34	SCE Corridor Class I Path
13	Lillian V. Miller Memorial Trail	35	Albert A. Chatigny Sr. Community Center
14	Leonard Bailey Park	36	Cherry Avenue Class I Path
15	San Bernardino County Museum	37	Stewart Park
16	Brookside Park	38	Sun Lakes Country Club Golf Course
17	Moonlight Farms Horse Exercise Track	39	Gilman Historic Ranch
18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

N

0 1000 2000
FEET

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

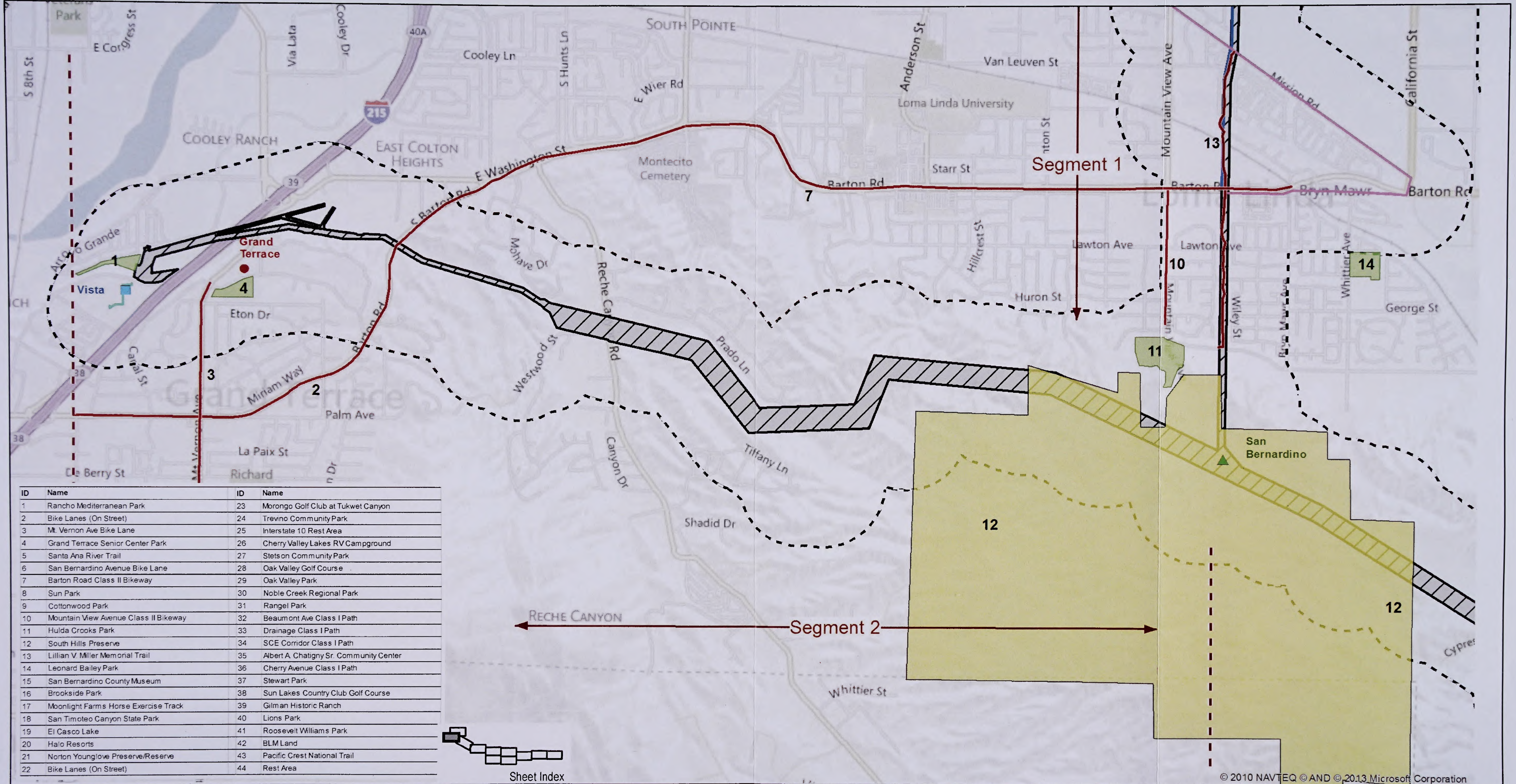
Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

West of Devers Upgrade Project

Figure D.15-1a

Recreational Resources, Segment 1



ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
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8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
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14	Leonard Bailey Park	36	Cherry Avenue Class I Path
15	San Bernardino County Museum	37	Stewart Park
16	Brookside Park	38	Sun Lakes Country Club Golf Course
17	Moonlight Farms Horse Exercise Track	39	Gilman Historic Ranch
18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

0 1000 2000
FEET

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

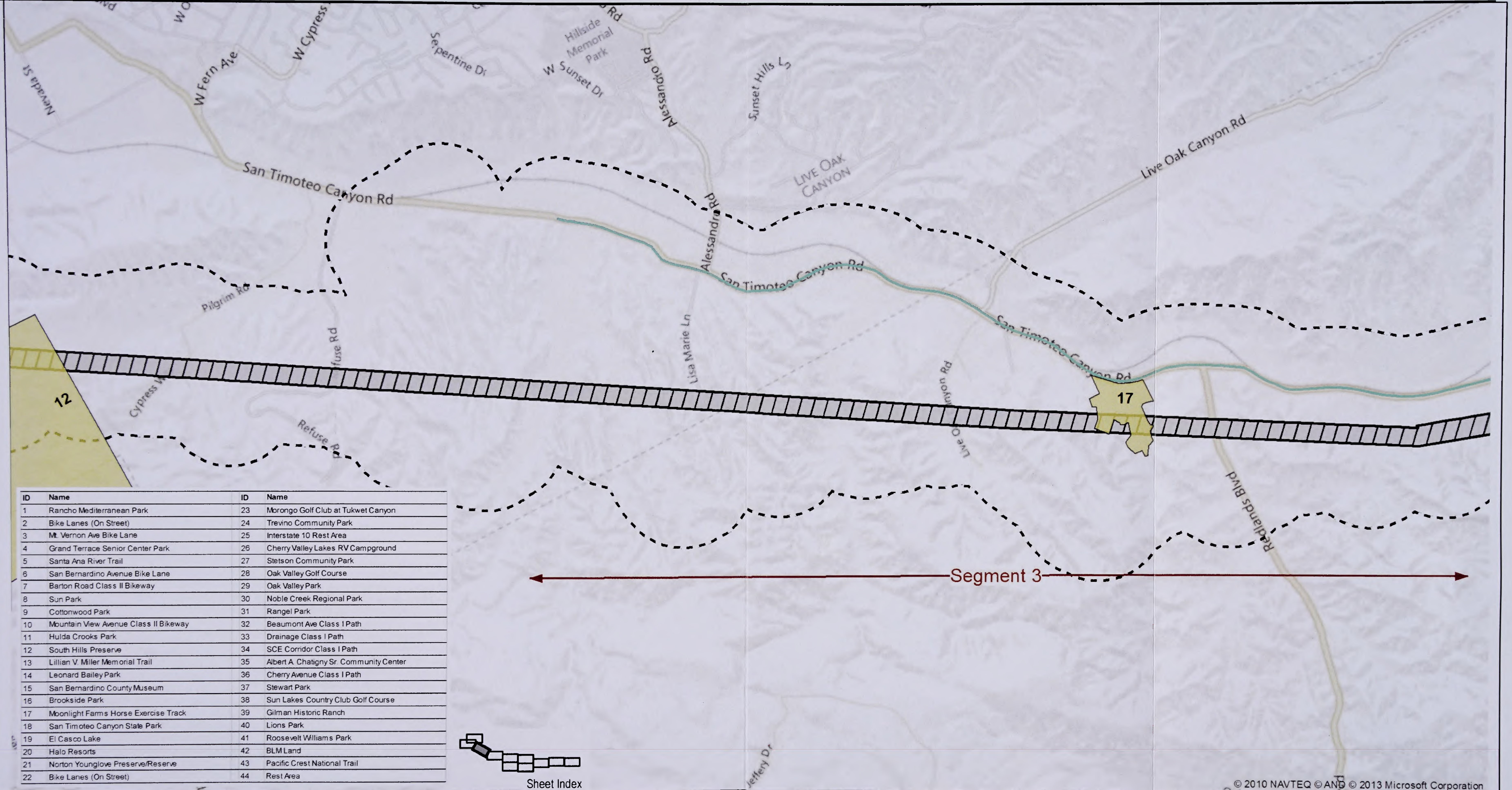
Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

West of Devers Upgrade Project

Figure D.15-1b

Recreational Resources, Segment 2



ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
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8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
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17	Moonlight Farms Horse Exercise Track	39	Gilman Historic Ranch
18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

0 1000 2000
FEET

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

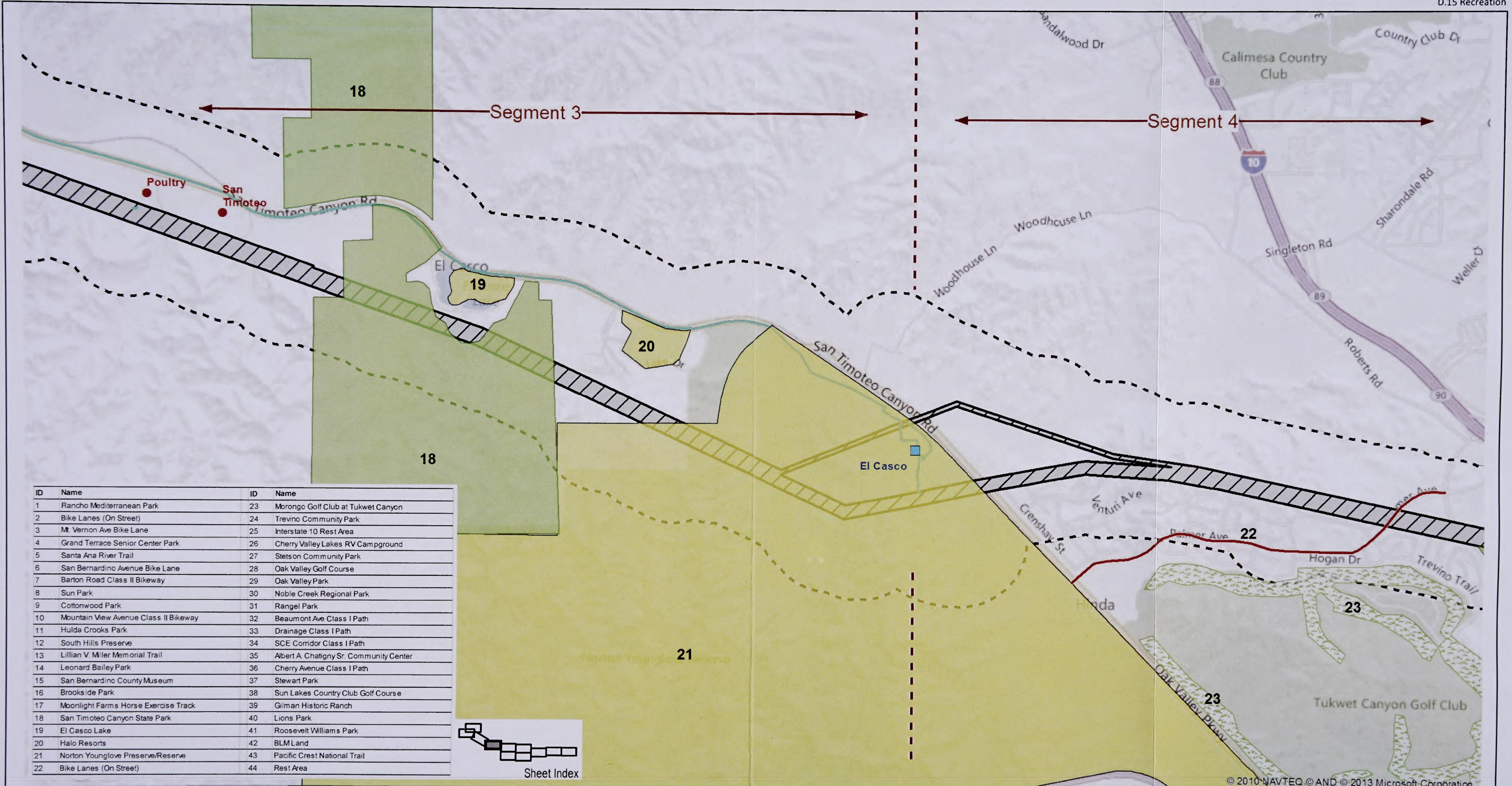
Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

West of Devers Upgrade Project

Figure D.15-1c

Recreational Resources, Segment 3



ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
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6	San Bernardino Avenue Bike Lane	28	Oak Valley Golf Course
7	Barton Road Class II Bikeway	29	Oak Valley Park
8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
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17	Moonlight Farms Horse Exercise Track	39	Gilman Historic Ranch
18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

N

0 1000 2000 FEET

West of Devers Upgrade Project

Figure D.15-1d

Recreational Resources, Segment 3 & 4

ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
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20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

N

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.15-1e

Recreational Resources, Segment 4

ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
4	Grand Terrace Senior Center Park	26	Cherry Valley Lakes RV Campground
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20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

0 1000 2000
FEET

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

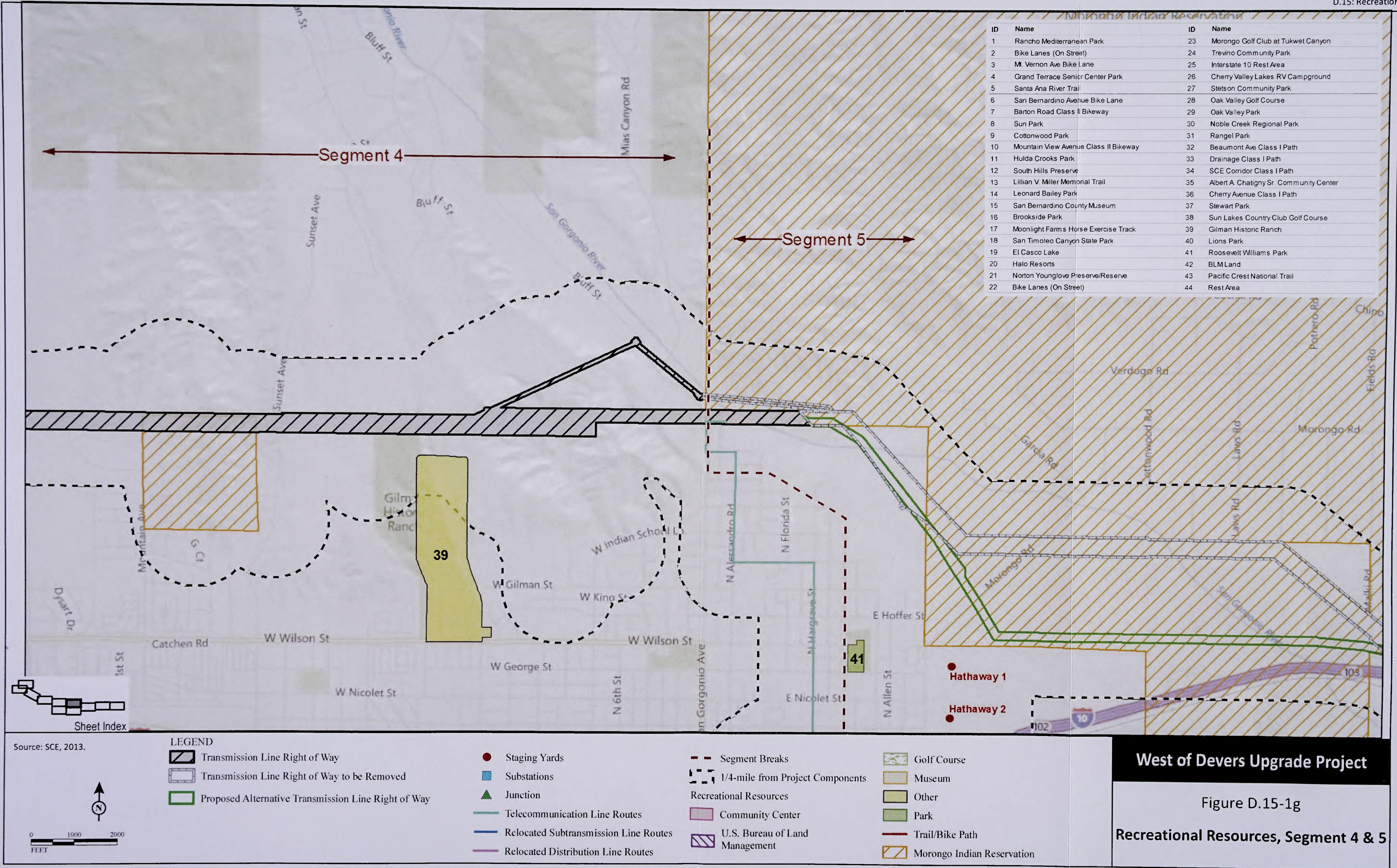
Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

West of Devers Upgrade Project

Figure D.15-1f

Recreational Resources, Segment 4



ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
4	Grand Terrace Senior Center Park	26	Cherry Valley Lakes RV Campground
5	Santa Ana River Trail	27	Stetson Community Park
6	San Bernardino Avenue Bike Lane	28	Oak Valley Golf Course
7	Barton Road Class II Bikeway	29	Oak Valley Park
8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
10	Mountain View Avenue Class II Bikeway	32	Beaumont Ave Class I Path
11	Hulda Crooks Park	33	Drainage Class I Path
12	South Hills Preserve	34	SCE Corridor Class I Path
13	Lillian V. Miller Memorial Trail	35	Albert A. Chatigny Sr. Community Center
14	Leonard Bailey Park	36	Cherry Avenue Class I Path
15	San Bernardino County Museum	37	Stewart Park
16	Brookside Park	38	Sun Lakes Country Club Golf Course
17	Moonlight Farms Horse Exercise Track	39	Gilman Historic Ranch
18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
4	Grand Terrace Senior Center Park	26	Cherry Valley Lakes RV Campground
5	Santa Ana River Trail	27	Stetson Community Park
6	San Bernardino Avenue Bike Lane	28	Oak Valley Golf Course
7	Barton Road Class II Bikeway	29	Oak Valley Park
8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
10	Mountain View Avenue Class II Bikeway	32	Beaumont Ave Class I Path
11	Hulda Crooks Park	33	Drainage Class I Path
12	South Hills Preserve	34	SCE Corridor Class I Path
13	Lillian V. Miller Memorial Trail	35	Albert A. Chatigny Sr. Community Center
14	Leonard Bailey Park	36	Cherry Avenue Class I Path
15	San Bernardino County Museum	37	Stewart Park
16	Brookside Park	38	Sun Lakes Country Club Golf Course
17	Moonlight Farms Horse Exercise Track	39	Gilman Historic Ranch
18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

Recreational Resources

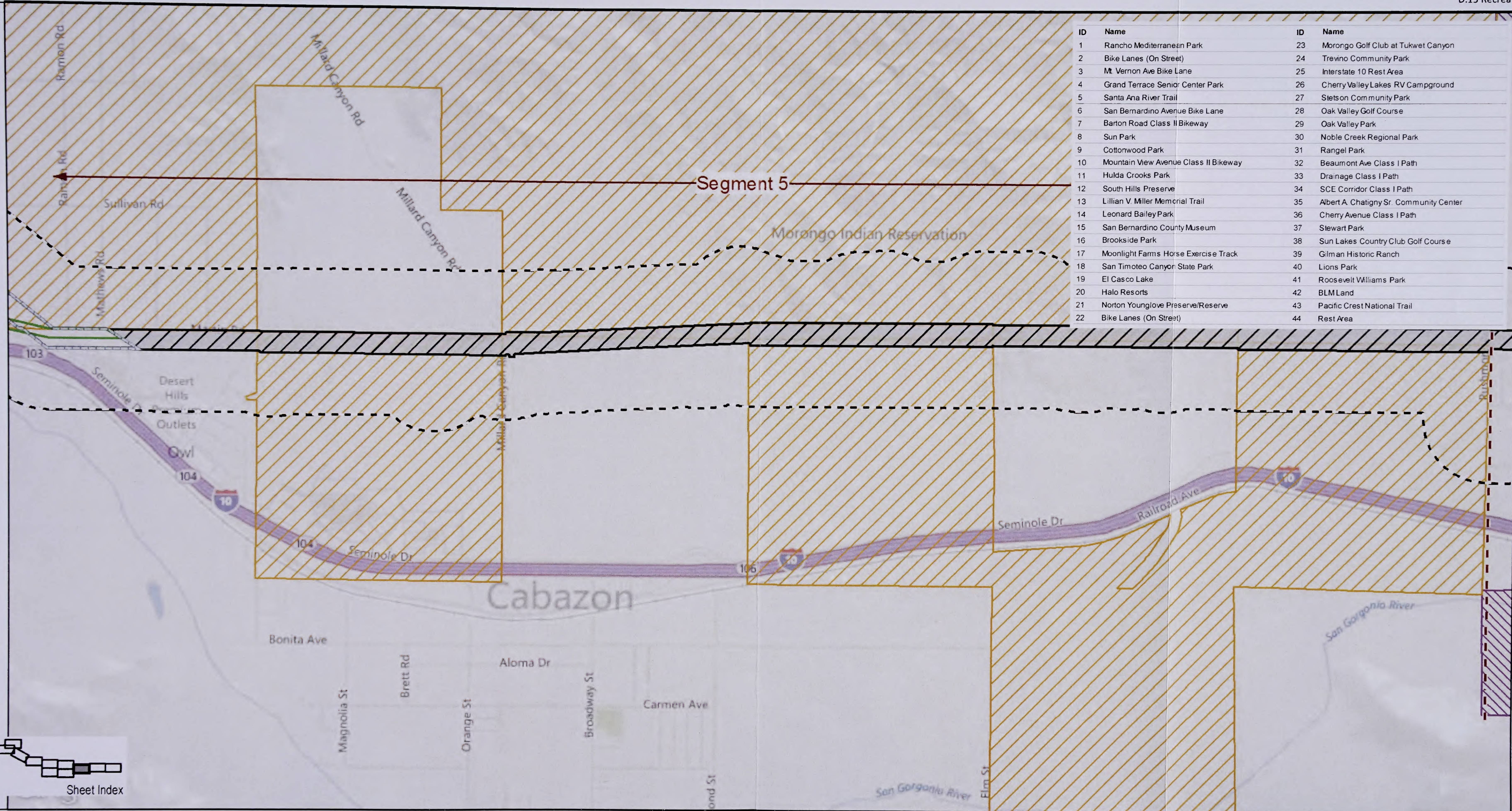
- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.15-1h

Recreational Resources, Segment 4 & 5



ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
4	Grand Terrace Senior Center Park	26	Cherry Valley Lakes RV Campground
5	Santa Ana River Trail	27	Stetson Community Park
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7	Barton Road Class II Bikeway	29	Oak Valley Park
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18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

N

0 1000 2000
FEET

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Alternative Transmission Line Right of Way
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

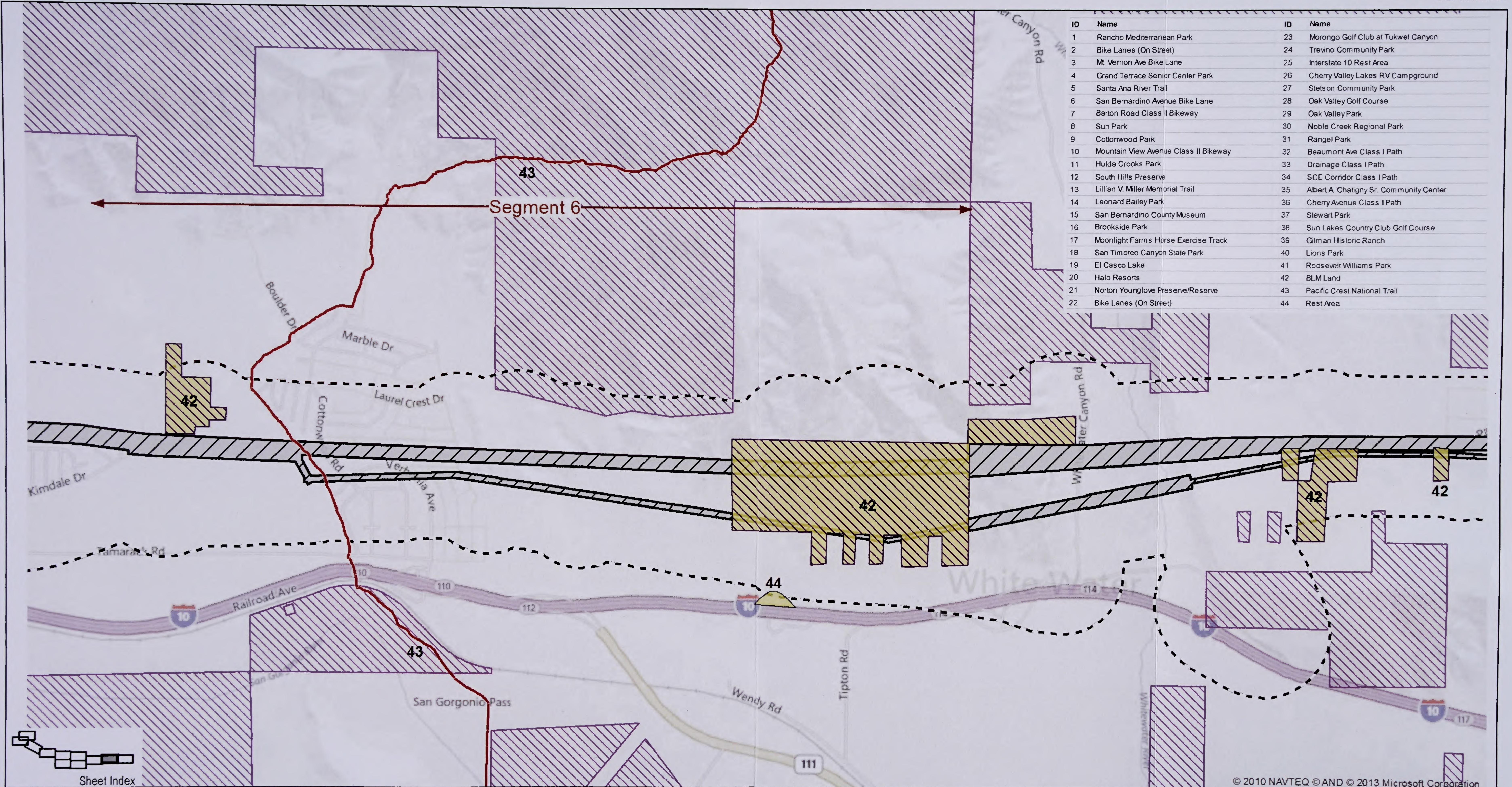
Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

West of Devers Upgrade Project

Figure D.15-1i

Recreational Resources, Segment 5



ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
4	Grand Terrace Senior Center Park	26	Cherry Valley Lakes RV Campground
5	Santa Ana River Trail	27	Stetson Community Park
6	San Bernardino Avenue Bike Lane	28	Oak Valley Golf Course
7	Barton Road Class II Bikeway	29	Oak Valley Park
8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
10	Mountain View Avenue Class II Bikeway	32	Beaumont Ave Class I Path
11	Hulda Crooks Park	33	Drainage Class I Path
12	South Hills Preserve	34	SCE Corridor Class I Path
13	Lillian V. Miller Memorial Trail	35	Albert A. Chatigny Sr. Community Center
14	Leonard Bailey Park	36	Cherry Avenue Class I Path
15	San Bernardino County Museum	37	Stewart Park
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18	San Timoteo Canyon State Park	40	Lions Park
19	El Casco Lake	41	Roosevelt Williams Park
20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

Recreational Resources

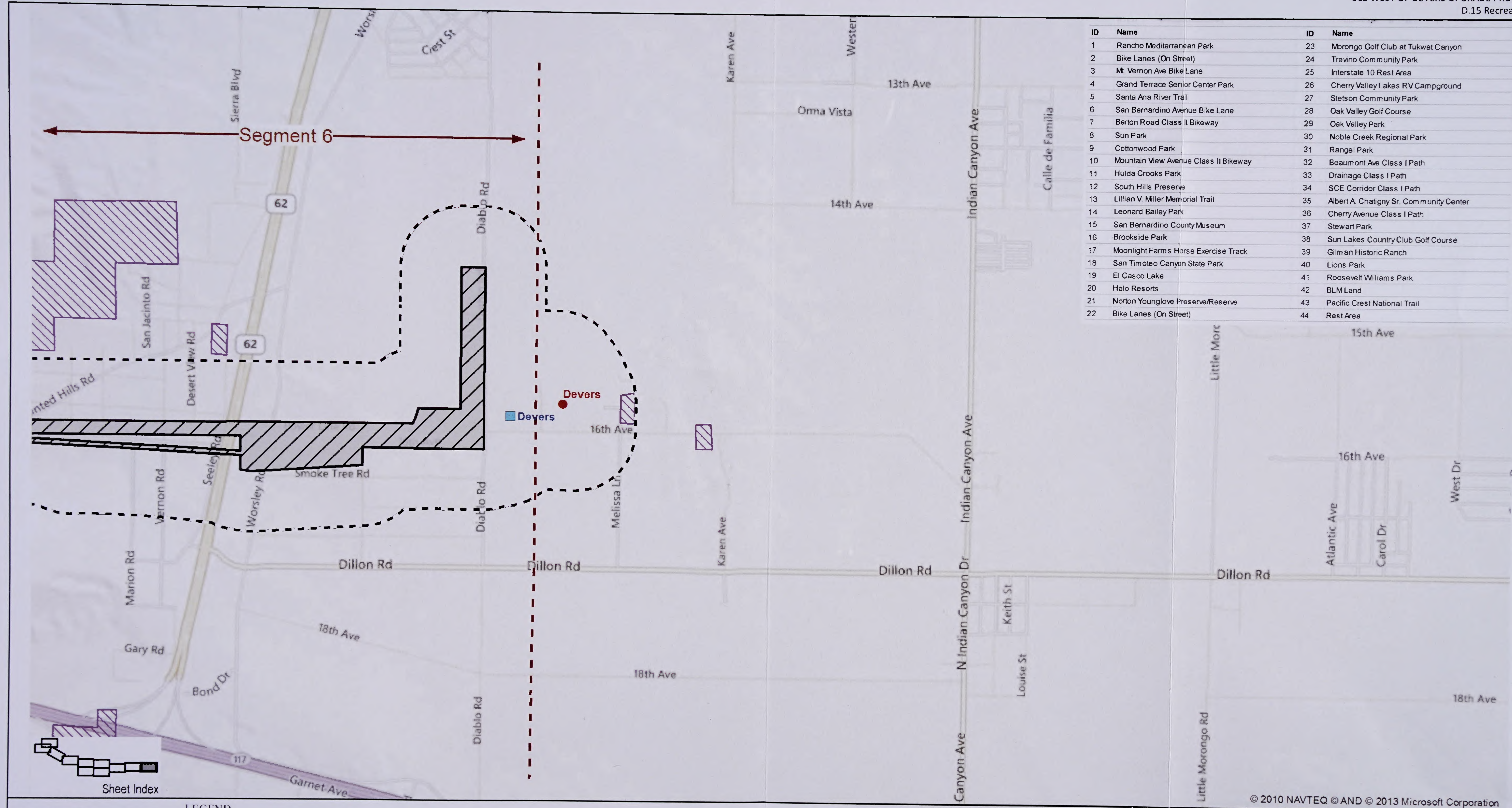
- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.15-1j

Recreational Resources, Segment 6



ID	Name	ID	Name
1	Rancho Mediterranean Park	23	Morongo Golf Club at Tukwet Canyon
2	Bike Lanes (On Street)	24	Trevino Community Park
3	Mt. Vernon Ave Bike Lane	25	Interstate 10 Rest Area
4	Grand Terrace Senior Center Park	26	Cherry Valley Lakes RV Campground
5	Santa Ana River Trail	27	Stetson Community Park
6	San Bernardino Avenue Bike Lane	28	Oak Valley Golf Course
7	Barton Road Class II Bikeway	29	Oak Valley Park
8	Sun Park	30	Noble Creek Regional Park
9	Cottonwood Park	31	Rangel Park
10	Mountain View Avenue Class II Bikeway	32	Beaumont Ave Class I Path
11	Hulda Crooks Park	33	Drainage Class I Path
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20	Halo Resorts	42	BLM Land
21	Norton Younglove Preserve/Reserve	43	Pacific Crest National Trail
22	Bike Lanes (On Street)	44	Rest Area

Source: SCE, 2013.

LEGEND

- Transmission Line Right of Way
- Transmission Line Right of Way to be Removed
- Proposed Transmission Line Right of Way
- Proposed Alternative Transmission Line Right of Way
- Proposed Transmission Line Right of Way Common to Both
- Staging Yards
- Substations
- Junction
- Telecommunication Line Routes
- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- Segment Breaks
- 1/4-mile from Project Components

Recreational Resources

- Community Center
- U.S. Bureau of Land Management
- Golf Course
- Museum
- Other
- Park
- Trail/Bike Path
- Morongo Indian Reservation

N

0 1000 2000
FEET

West of Devers Upgrade Project

Figure D.15-1k

Recreational Resources, Segment 6

July 2016

D.16 Transportation and Traffic

This section describes the affected environment for Transportation and Traffic in Section D.16.1 and presents the relevant regulations and standards in Section D.16.2. Sections D.16.3 through D.16.5 describe the impacts of the Proposed Project and the alternatives. Section D.16.6 presents the mitigation measures and mitigation monitoring requirements, and D.16.7 lists references cited.

D.16.1 Environmental Setting / Affected Environment

D.16.1.1 Regional Setting and Approach to Data Collection

The Proposed Project includes upgrades to existing 220 kV transmission lines between San Bernardino, Vista, and Devers Substations; equipment changes at seven substations; relocation of 66 kV subtransmission lines and 12 kV distribution lines; and installation of telecommunication lines and equipment. Of these activities, the most labor-, time-, and material-intensive activity would be the 220 kV upgrade.

The project study area includes unincorporated areas of Riverside and San Bernardino Counties and portions of the cities of Banning, Beaumont, Calimesa, Colton, Desert Hot Springs, Grand Terrace, Loma Linda, Palm Springs, Rancho Cucamonga, Redlands, San Bernardino, and Yucaipa. The Proposed Project component in the City of Rancho Cucamonga is limited to improvements within the Mechanical Electrical Equipment Room (MEER) at Etiwanda Substation. The work within this existing facility would require a limited number of workers and deliveries and would not have the potential to affect traffic in the City of Rancho Cucamonga; therefore, the City of Rancho Cucamonga is not included for further discussion.

Data for the transportation network were collected and analyzed based on alignment maps provided by SCE and other maps from various reports and websites from the state and local agencies. Traffic volume data were obtained from agency websites and reports. Lane information was obtained from aerial photographs and staging/construction yard locations were identified by the applicant (SCE, 2014).

Surface Transportation

Traffic would be generated on local and regional roadways due to the movement of construction crews, equipment, and materials required to remove and install towers and poles and to install electric conductor and telecommunications cable. In some instances, temporary road or traffic lane closures and traffic controls would be required, such as during stringing of overhead conductors and ground wire across roads, movement of large equipment on public roads, and trenching or boring in locations where sections of subtransmission and distribution lines and telecommunications lines would be placed underground.

The 220 kV transmission line upgrades proposed under the West of Devers Upgrade Project would occur within an existing right-of-way (ROW) for most of the alignment. Segment 1 of the Proposed Project, extending from San Bernardino Substation in Redlands to San Bernardino Junction southeast of Loma Linda, would pass through Redlands and Loma Linda and would cross over local roads and Interstate 10 (I-10). Segment 2, from Vista Substation in Grand Terrace to San Bernardino Junction, would pass through Grand Terrace, Colton, and Loma Linda, crossing over local roads and I-215. Segment 3, extending from San Bernardino Junction in San Bernardino County to El Casco Substation in Riverside County, would be in existing ROW in the hills southwest of San Timoteo Canyon Road, passing through Redlands and unincorporated areas of San Bernardino and Riverside Counties. Segment 4, extending east from El Casco Substation, would cross I-10 and as well as local roads in the cities of Calimesa, Beaumont and Banning. Segment 5 would be on reservation lands of the Morongo Band of Mission Indians land east of Banning. Here a two-mile section of the existing ROW would be abandoned and replaced by ROW nearer I-10. The route in this segment would cross or parallel a few lightly travelled local roads. Segment 6 would extend from the east side of the reservation to Devers Substation, passing through unincorporated Riverside County and BLM land and crossing a few lightly travelled local roads and State Route 62 (SR-62) (Twentynine Palms Highway) north of I-10.

In addition to the 220 kV upgrades, the Proposed Project would include relocating two 66 kV subtransmission lines from the existing corridor between San Bernardino Substation and San Bernardino Junction. The 66 kV lines would be relocated to new poles installed along public roads or utility ROW, with one section leading in to Timoteo Substation being located underground. As well, the Proposed Project would relocate two 12 kV distribution lines. (See Figure B-13, Proposed Relocated Subtransmission and Distribution Line Routes.)

Fiber optic telecommunications cable would be located both on utility poles and in underground conduits. The three primary lines would be between San Bernardino Substation and an existing cable located on West Redlands Boulevard, along San Timoteo Canyon Road, and between Maraschino Substation in Beaumont to an existing communications line on the Devers-Valley line. Various communications facilities would be connected within existing substations as well (see Figures B-15a through B-15e, Proposed Telecommunication Routes.). Section B, Description of Proposed Project, provides a detailed discussion of all project elements.

Air Transportation

The use of helicopters in transmission line construction has increased over the past decade. Although SCE states that the majority of deconstruction (removal) of existing facilities would be performed using ground-based equipment (i.e., cranes and haul vehicles), the utility anticipates using light and medium duty helicopters (such as the Bell 500 and Kaman Kmax) during removal of existing facilities from some sites (SCE, 2014). In those circumstances, transmission hardware, poles, tower structural assemblies, and conductors would be flown to designated laydown areas, from where they would be transported via road to their final destinations. Helicopters also would be used to stage materials at and near work sites and to transport personnel required for the deconstruction work. SCE anticipates that during these operations helicopters may land in approved disturbance areas, including tower and pole sites, pull sites, and access or spur roads.

In its Preliminary Helicopter Use Plan (see Attachment D.16-1 at the end of this section), SCE has indicated that it does not anticipate using helicopter-based construction. However, it does state that helicopters would be used during conductor stringing and during installation of marker balls on conductors, where these are required. Also, SCE acknowledges that helicopters may be employed in other aspects of construction. The decision on whether and where to use helicopters would be dependent on final engineering and the selected contractor.

During ongoing regular operations after construction, helicopters would be used for line and ROW inspections and insulator washing.

D.16.1.2 Environmental Setting by Segment

Major regional highways in the project vicinity include Interstate (I) highways and State Routes (SR). These are I-10, I-215, SR-60, SR-62, SR-79, SR-111, and SR-243. Average daily traffic on various segments of these highways is shown in Table D.16-1. These regional highways would be used by construction workers and materials delivery trucks to reach assembly points, yards, and work sites along the project's length.

Table D.16-1. Average Daily Traffic on Highways

City	Highway	Roadway Section	Average Daily Traffic
Banning	I-10	Between Hargrave Street and SR-243	116,000
Beaumont	I-10	Between Oak Valley Road and Cherry Valley Avenue	91,000
	SR-60	Between I-10 and Jack Rabbit Trail	44,500
	SR-79	Between California Avenue and Gilman Springs Road	28,500
Calimesa	I-10	Between Cherry Valley Boulevard and Singleton Road	99,000
Colton	I-215	South of I-10	170,000
Desert Hot Springs	SR-62	Between Pierson Boulevard and Indian Canyon Drive	22,000
Grand Terrace	I-215	Between Barton Road and La Cadena Drive	153,000
Loma Linda	I-10	Between Mountain View Avenue and Waterman Avenue	194,000
Palm Springs	I-10	Between SR-111 and Indian Avenue	79,000
	SR-111	Between I-10 and Snow Creek Road	13,200
Redlands	I-10	Between Mountain View Avenue and California Avenue	190,000
Yucaipa	I-10	Between Yucaipa Boulevard and Wildwood Canyon Road	105,000
County of Riverside	I-10	Between SR-111 and Hargrave Street	116,000
	SR-79	Between California Avenue and Gilman Springs Road	28,500
	SR-62	Between I-10 and Pierson Boulevard	19,000
San Bernardino	I-10	Between Mountain View Avenue and Tippecanoe Avenue	194,000

I = Interstate SR = State Route

Source: SEC 2013, PEA Table 4.16-1, from California Department of Transportation: http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2010all/index.html.

In addition to regional highways, major and primary arterials in the region would provide access to project sites. These are identified in Table D.16-2, Average Daily Traffic on Major and Primary Arterials. These routes would provide vehicle access to worker parking/assembly points, construction yards, and work sites.

Table D.16-2. Average Daily Traffic on Major and Primary Arterials

City	Arterial	Segment	Average Daily Traffic
Banning	Highland Springs	North of Wilson Street	8,633
	Wilson Street	Between Highland Springs Avenue and Hathaway Street	12,544
	Ramsey Street	Between Hargrave Street and Hathaway Street	9,423
	Sunset Avenue	Between Ramsay Street and Gilman Avenue	14,782
	8th Street	Between Wilson Street and Ramsey Street	10,513
	Hargrave Street	Between Wilson Street and I-10	10,823
Beaumont	Oak Valley Road	Between I-10 and Oak View Drive	5,400
	14th Street	Between Oak View Drive and Highland Springs Road	5,400
	San Timoteo Canyon Road	Between I-10 and Palmer Avenue	5,400
	Highland Springs Road	Between I-10 and Brookside Avenue	11,800
	Beaumont Avenue	Between Oak Valley Parkway and Cougar Way	12,500
	Brookside Avenue	Between Highland Springs Avenue and I-10	1,000

Table D.16-2. Average Daily Traffic on Major and Primary Arterials

City	Arterial	Segment	Average Daily Traffic
Calimesa	San Timoteo Canyon Road	Between I-10 and Palmer Avenue	4,400
	Calimesa Boulevard	Between Singleton Road and Cherry Valley Avenue	7,300
	Singleton Road	North of Woodhouse Road	1,300
	Desert Lawn Road	Between Champions Road and Palmer Avenue	850
Desert Hot Springs	Pierson Boulevard	Between SR-62 and Indian Avenue	2,100
	Mission Lakes Boulevard	Between SR-62 and Indian Avenue	2,400
Loma Linda	Redlands Boulevard	Between Mountain View Avenue and Waterman Avenue	21,000
	Anderson Street	Between Barton Road and I-10	24,400
	Mountain View Avenue	Between Barton Road and I-10	24,000
	Barton Road	Between Waterman Avenue and Mountain View Avenue	24,500
Redlands	San Timoteo Canyon Road	Between Alessandro Road and Live Oak Canyon Road	20,000
	San Bernardino Avenue	Between Mountain View Avenue and California Street	33,000
	Redlands Boulevard	Between Mountain View Avenue and California Street	39,000
Yucaipa	Yucaipa Boulevard	Between I-10 and Oak Glen Road	47,000
	Oak Glen Road	Between I-10 and Yucaipa Boulevard	24,000
County of Riverside	Cherry Valley Boulevard	Between I-10 and Highland Springs Avenue	5,100

I = Interstate SR = State Route
Source: SCE 2013, PEA Table 4.16-2

Heavy vehicles use interstate highways as well as a network of designated regional and local truck routes. Table D.16-3, Regional and Local Truck Routes, identifies truck routes in the project study area. Based on the road network, it appears access points to all reaches of the Proposed Project are accessible from the interstate highway system and regional/local truck routes.

Beginning at San Bernardino and Vista Substations and ending at Devers Substation, the environmental setting for Transportation and Traffic is described below for each of the six project segments.

Table D.16-3. Regional and Local Truck Routes

City	Route	Roadway Section
Banning	I-10	Entire
	Highland Springs Avenue	North of Wilson Street
	Wilson Street	Between Highland Springs Avenue and Hathaway Street
	Ramsey Street	Between Hargrave Street and Hathaway Street
	Hathaway Street	Between Ramsay Street and Morongo Road
	Sunset Avenue	Between Ramsay Street and Gilman Avenue
	8th Street	Between Wilson Street and Ramsay Street
	Hargrave Street	Between Wilson Street and I-10

Table D.16-3. Regional and Local Truck Routes

City	Route	Roadway Section
Beaumont	I-10	Entire
	SR-60	Entire
	SR-79	Entire
	Oak Valley Road	Between I-10 and Oak View Drive
	14th Street	Between Oak View Drive and Highland Springs Avenue
	Highland Springs Road	Between I-10 and Brookside Avenue
	San Timoteo Canyon Road	Between I-10 and Palmer Avenue
	Oak Valley Parkway	Between Beaumont Avenue and Highland Springs Avenue
	Beaumont Avenue	Between Oak Valley Parkway and Cougar Way
	Brookside Avenue	Between Highland Springs Avenue and I-10
Calimesa	I-10	Entire
	San Timoteo Canyon Road	Between I-10 and Palmer Avenue
	Calimesa Boulevard	Between Singleton Road and Cherry Valley
	Singleton Road	North of Woodhouse Road
	Desert Lawn Road	Between Champions Road and Palmer Avenue
Colton	I-215	Entire
Desert Hot Springs	SR-62	Between Pierson Boulevard and Indian Canyon Drive
	Pierson Boulevard	Between SR-62 and Indian Avenue
	Mission Lakes Boulevard	Between SR-62 and Indian Avenue
Grand Terrace	I-215	Entire
	Barton Road	Between Reche Canyon Road and I-215
	Mt. Vernon Avenue	Between I-215 and Van Buren Street
	Michigan Avenue	Between Barton Road and Van Buren Street
	La Cadena Drive	Between I-215 and Agua Mansa Road
Loma Linda	I-10	Entire
	Redlands Boulevard	Between Mountain View Avenue and Waterman Avenue
	Anderson Street	Between Barton Road and I-10
	Mountain View Avenue	Between Barton Road and I-10
	Barton Road	Between Mountain View Avenue and Waterman Avenue
Palm Springs	I-10	Entire
	SR-111	Entire
Redlands	I-10	Entire
	San Timoteo Canyon Road	Between Alessandro Road and Live Oak Canyon Road
	San Bernardino Avenue	Between Mountain View Avenue and California Street
	Redlands Boulevard	Between Mountain View Avenue and California Street
County of Riverside	I-10	Entire
	SR-60	Entire
	SR-79	Entire
	SR-243	Entire
	Cherry Valley Boulevard	Between I-10 and Highland Springs Avenue
San Bernardino	I-10	Entire
	I-215	Entire
Yucaipa	I-10	Entire

I = Interstate SR = State Route

Source: SCE 2013, PEA Table 4.16-3, from City of Banning General Plan, 2006; City of Loma Linda General Plan, 2009; City of Beaumont General Plan, 2007; City of Redlands General Plan, 1997; City of Calimesa General Plan, 1994; City of Palm Springs General Plan, 2007; County of Riverside General Plan, 2003; City of Grand Terrace General Plan, 2010; City of Desert Hot Springs General Plan, 2000.

D.16.1.2.1 Segment 1: San Bernardino

Roadways crossed by the proposed route between San Bernardino Substation and San Bernardino Junction are listed in Table D.16-4. The only regional route in this segment is I-10, which is under the jurisdiction of Caltrans. All of the other roadways crossed are under the jurisdiction of the cities of Loma Linda or Redlands. Mileposts are approximate.

Table D.16-4. Public Roadways along the Proposed Route – Segment 1: San Bernardino

Roadway	Jurisdiction	Lanes	Milepost	Orientation of Route
San Bernardino Avenue	Redlands	4	SB-0.1	Overhead Crossing
Almond Avenue	Redlands	4	SB-0.3	Overhead Crossing
Lugonia Avenue	Redlands	4	SB-0.6	Overhead Crossing
Interstate 10	Caltrans	8	SB-0.85	Overhead Crossing
Business Center Dr	Loma Linda	2	SB-.93	Overhead Crossing
Redlands Boulevard	Loma Linda	4	SB-1.1	Overhead Crossing
Mission Road	Loma Linda	2	SB-1.5	Overhead Crossing
Van Leuven Street	Loma Linda	2	SB-1.6	Overhead Crossing
Glen Summer Dr	Loma Linda	2	SB-1.7	Overhead Crossing
Barton Road	Loma Linda	4	SB-2.1	Overhead Crossing
Lawton Avenue	Loma Linda	2	SB-2.35	Overhead Crossing
Hinckley Street	Loma Linda	2	SB-2.5	Overhead Crossing
Beaumont Avenue	Loma Linda	4	SB-2.8	Overhead Crossing

Source: Aspen review of Google Earth maps.

The Burlington Northern Santa Fe Railway would be crossed by the route at MP SB-0.75 and the Union Pacific Railroad would be crossed by the proposed route at MP SB-1.9. OmniTrans provides fixed-route bus/transit services on 27 local routes in San Bernardino County (OmniTrans, 2014). The project alignments cross Routes 8 and 19 on Redlands Boulevard and Route 9 on Barton Road in Loma Linda and Route 325 on Barton Road in Grand Terrace. In addition, Greyhound uses I-10 for bus service between Indio and San Bernardino (Greyhound, 2014). San Bernardino International Airport is located approximately 1 mile north of the San Bernardino Substation. Heliports at the main Loma Linda University Medical Center and its East Campus are located near Barton Road, approximately 1.4 miles and 0.7 miles west of the alignment, respectively.

In addition to the 220 kV line upgrades, SCE would relocate 66 kV subtransmission lines and 12 kV distribution lines to overhead poles and underground conduits in order make room for the 220 kV upgrades in the ROW south of San Bernardino Substation. The 66 kV lines would be relocated to new poles along public roads and utility ROWs, except for one section leading into Timoteo Substation that would be located underground. The poles for the 66 kV circuit to Timoteo Substation would be installed along West San Bernardino Avenue, Almond Avenue, Research Drive, West Lugonia Avenue, and Bryn Mawr Avenue. At Redlands Avenue, this line would be installed underground before entering Timoteo Substation on Mountain View Avenue. A fiber optic communications cable would be co-located with this 66 kV line. The second 66 kV line would extend on new poles from San Bernardino Substation along West San Bernardino Avenue to the ROW connecting to Almond Avenue. This route would continue along Almond Avenue to Nevada Street then south along Nevada Street to Citrus Avenue, before turning south on Iowa Street to an interconnection with an existing line at Barton Road.

In Loma Linda, the two relocated 12 kV distribution lines would be underground in Mission Road, from the Segment 1 220 kV ROW to California Street, and would continue south underground in California

Street to Barton Road. One of the lines would then extend overhead on existing 66 kV poles along Burton Road and Mayberry Street, cross the railroad line, and continue along the road to the Segment 1 220 kV corridor.

Two staging yards would be located in Segment 1, both in the vicinity of San Bernardino Substation. One, Mountain View No. 1 Yard, is a previously disturbed 2.8-acre site in Redlands, west of Mountain View Avenue and north of San Bernardino Avenue. The other, Lugonia Yard, is a 3.9-acre site south of Lugonia Avenue adjacent to the Segment 1 corridor in Redlands that has been used previously as a staging area for a pipeline project.

D.16.1.2.2 Segment 2: Colton and Loma Linda

Roadways between Vista Substation and San Bernardino Junction are listed in Table D.16-5. The only regional route in this area is I-215, which is under Caltrans jurisdiction. The local roadways crossed are under the jurisdiction of San Bernardino County, Colton, or Grand Terrace.

Table D.16-5. Public Roadways along the Proposed Route – Segment 2: Colton and Loma Linda

Roadway	Jurisdiction	Lanes	Milepost	Orientation of Route
Interstate-215	Caltrans	6	0.5	Overhead Crossing
Mt. Vernon Avenue	Grand Terrace	4	0.6	Overhead Crossing
E. Barton Road	Colton	4	1.2	Overhead Crossing
Reche Canyon Road	San Bernardino County	2	2.1	Overhead Crossing

Source: Aspen review of Google Earth maps.

The project alignment crosses two bus routes, OmniLink's Route 325 on Barton Road in Grand Terrace and Riverside Transit Authority's Route 14, providing bus service to the area via I-215 and I-10 (RTA, 2014).

Heliports at the Loma Linda University Medical Center and its East Campus are located near Barton Road, 0.9 miles north of the alignment.

One staging yard would be located in Segment 2. The 4.4-acre Grand Terrace Yard would be at the north-east corner of Mt. Vernon Avenue and Canal Street in Grand Terrace. The vacant site is a previously disturbed utility corridor property.

D.16.1.2.3 Segment 3: San Timoteo Canyon

Roadways located along Segment 3 of the transmission line between San Bernardino Junction and El Casco Substation are listed in Table D.16-6. The roadways are under the jurisdiction of Riverside County, the City of Redlands, or San Bernardino County. A number of dirt access roads and trails in the hills between San Bernardino Junction and El Casco Substation are crossed by the ROW; these but are not listed in Table D.16-3.

Table D.16-6. Public Roadways along the Proposed Route – Segment 3: San Timoteo Canyon

Roadway	Jurisdiction	Lanes	Milepost	Orientation of Route
Palomares Road	Redlands	2	7.2	Overhead Crossing
Smiley Rd/Lisa Marie Ln	Redlands	2	9	Overhead Crossing
Live Oak Canyon Road	Riverside County	dirt	9.3	Overhead Crossing
Redlands Boulevard	Riverside County	2	10.8	Overhead Crossing

Source: Aspen review of Google Earth maps.

A new communications line would be installed on existing poles along San Timoteo Canyon Road, from an existing line located approximately 3,000 feet north of Alessandro Road to El Casco Substation. Two staging yards would be located in Segment 3. The 17-acre previously disturbed vacant San Timoteo Yard is located along San Timoteo Canyon Road in Riverside County. Nearby is the 13-acre Poultry Yard located on previously disturbed land at MCM Poultry.

D.16.1.2.4 Segment 4: Beaumont and Banning

Roadways located along the segment of the proposed transmission line through the cities of Calimesa, Beaumont, and Banning are listed in Table D.16-7. The only regional route crossed this segment is I-10, which is under the jurisdiction of Caltrans. The local roadways are under the jurisdiction of Riverside County, or the cities of Calimesa, Banning, or Beaumont.

Table D.16-7. Public Roadways along the Proposed Route – Segment 4: Beaumont and Banning

Roadway	Jurisdiction	Lanes	Milepost	Orientation of Route
San Timoteo Canyon Rd	Riverside County/Calimesa	2	16	Overhead Crossing
Palmer Ave			17.8	Overhead Crossing
Cherry Valley Blvd		4	18	Overhead Crossing
Plantation Dr	Calimesa	2	18.5	Overhead Crossing
Desert Lawn Dr	Calimesa	2	18.6	Overhead Crossing
Brookside Ave	Calimesa	4	18.7	Overhead Crossing
Interstate-10	Caltrans	6	18.9	Overhead Crossing
N Deodar Dr		2	19.3	Overhead Crossing
S Monte Verde Dr		2	19.5	Overhead Crossing
Dalea Way		2	19.6	Overhead Crossing
Snowberry Rd		2	19.65	Overhead Crossing
Bentwood Rd		2	19.9	Overhead Crossing
Fairway Dr		2	20.3	Overhead Crossing
Oak View Drive	Beaumont	2	20.7	Overhead Crossing
Beaumont Avenue	Riverside County/Beaumont	4	21.6	Overhead Crossing
Palm Avenue	Beaumont	2	22	Overhead Crossing
Cherry Avenue	Beaumont	2	22.3	Overhead Crossing
Highland Springs Ave	Banning/Beaumont	2	23.3	Overhead Crossing
14th Street	Banning/Beaumont	2	24.9	Overhead Crossing and Parallel
Sunset Avenue	Banning	2	25	Overhead Crossing
Fraser St	Banning	Dirt	26.1	Overhead Crossing
Bluff Street	Banning	2	27.3	Overhead Crossing

Source: Aspen review of Google Earth maps.

The Union Pacific Railroad runs parallel to San Timoteo Canyon Road just east of El Casco Substation and is crossed by the two sections of the proposed transmission line route located north and south of the substation. A heliport is located at San Gorgonio Memorial Hospital on Highland Springs Avenue in Banning, approximately 1 mile south of the alignment.

A new communications line would be installed between Maraschino Substation on Minnesota Avenue in Beaumont to a connection with the Devers-Valley line on Highland Springs Avenue. The line would be on existing poles from the substation to Beaumont Avenue, then underground in East 1st Street and Highland Springs Avenue, where it would again transition aboveground near Potrero Boulevard and continue overhead to the interconnection south of Breckinridge Avenue. Ground disturbance would be required on Highland Springs Road between East 1st Street and Potrero Boulevard and between Breckinridge Avenue and the splice point on Highland Springs Road, approximately 2,000 feet to the south.

Two staging yards would be located in Segment 4 near I-10 and SR-79. The 3.9-acre Beaumont 1 Yard is at the northeast corner of South California Avenue and E. Third Street in Beaumont. This graveled, fenced property has been used as a staging area for a previous electrical project. Nearby, the 5-acre Beaumont 2 Yard located at 853 E. Third Street east and Maple Avenue in Beaumont also has been a staging area for a previous electrical project.

D.16.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

Roadways located along Segment 5 are listed in Table D.16-8. This segment begins just east of Bluff Street in Banning and continues east in open countryside north of an existing quarry operation, where it enters reservation land. On the reservation, the alignment would depart from the existing ROW and enter a new ROW extending across Morongo Road and then continuing parallel to I-10 to Malki Road, where it would rejoin the existing ROW and continue to Rushmore Avenue, where it would exit Morongo tribal lands.

Table D.16-8. Public Roadways along the Proposed Route – Segment 5: Morongo Tribal Lands and Surrounding Areas

Roadway	Jurisdiction	Lanes	Milepost	Orientation of Route
Morongo Road	Morongo Indian Reservation	2	29	Overhead Crossing
Malki Rd	Morongo Indian Reservation	2	30.9	Overhead Crossing
Martin Rd	Morongo Indian Reservation	2	30.9-31.9	Parallel
Millard Pass	Morongo Indian Reservation	2	31.9	Overhead Crossing
Millard Canyon Rd	Morongo Indian Reservation	dirt	33.9	Overhead Crossing
Rushmore Ave	Riverside County	2	35.9	Overhead Crossing

Source: Aspen review of Google Earth maps.

The Banning Municipal Airport is south of I-10, about 0.6 miles south of the proposed 220 kV alignment. There were reportedly an average of 88 aircraft operations per week (February 2013–March 2014) at the airport, with 72 percent being transient general aviation and 28 percent being local general aviation (Banning, 2014). Forty single engine airplanes are based at the airport (Banning, 2014).

Three staging yards would be located in Segment 5 near I-10. The 21-acre Matich Yard is located at the southeast corner of E. Theodore Street and N. Hathaway and is previously disturbed. The 30-acre Hathaway 1 Yard located at 600 N. Hathaway Street in Banning is a previously disturbed, fenced property. Nearby, the 15.7-acre Hathaway 2 Yard on the northeast side of E. Williams Street and North Hathaway Street in Banning is an unimproved property.

D.16.1.2.6 Segment 6: Whitewater and Devers

The roadways that would be affected by the Proposed Project in Segment 6, between Rushmore Avenue and Devers Substation, are listed in Table D.16-9. The only regional route in this area is State Route 62, which is under the jurisdiction of Caltrans. Except for State Route 62, which is under Caltrans jurisdiction, all of the other roadways are under the jurisdiction of Riverside County. One service road for the alignment is on BLM land.

Table D.16-9. Public Roadways along the Proposed Route – Segment 6: Whitewater and Devers

Roadway	Jurisdiction	Lanes	Milepost	Orientation of Route
Kimdale Drive	Riverside County	dirt	37.5	Overhead Crossing
Cottonwood Road	Riverside County	2	38.1	Overhead Crossing
Desert View Avenue	Riverside County	2	38.8	Overhead Crossing
Whitewater Canyon Rd	Riverside County	2	41.3	Overhead Crossing
Rock Mine Road	Riverside County	dirt	41.9	Overhead Crossing
16th Avenue	Riverside County	dirt	42-45	Parallel
Windhaven Rd	Riverside County	dirt	42.9	Overhead Crossing
Painted Hills Road	Riverside County	dirt	43	Overhead Crossing
Ocotillo Rd	Riverside County	dirt	43.1	Overhead Crossing
Country View Rd	Riverside County	dirt	43.2	Overhead Crossing
Marion Avenue	Riverside County	2	43.3	Overhead Crossing
Vernon Road	Riverside County	2	43.6	Overhead Crossing
Desert View Road	Riverside County	dirt	43.7	Overhead Crossing
Seeley Street	Riverside County	2	43.8	Overhead Crossing
State Route 62	Caltrans	4	43.9	Overhead Crossing
Worsley Road	Riverside County	2	44	Overhead Crossing
Power Line Rd	Riverside County	dirt	44-45	Parallel
Diablo Road	Riverside County	dirt	44.8	Overhead Crossing

Source: Aspen review of Google Earth maps.

SCE maintains a heliport adjacent to Devers Substation. One staging yard would be located in Segment 6: the fenced and graveled 9.5-acre Devers Yard located east of SCE's Devers Substation. The yard currently is used as a staging area for another electrical project.

D.16.1.3 Environmental Setting for Connected Actions

Desert Center Area. Interstate 10 is a major interstate route connecting southern California with Arizona and point west; roads in the Desert Center area are lightly travelled. In the Desert Center area, I-10 has two lanes of travel in each direction. The Annual Average Daily Traffic for I-10 in the area was 25,000 in 2010. All other roads in the area are lightly travelled, with level of service A. SR-177 is a predominantly north-south road that provides access from Kaiser Road to I-10. It is also known as Desert Center Rice Road. It has one lane of travel in each direction. Kaiser Road has one lane of travel in each direction and a centerline stripe. It is a predominantly north-south road with a southern terminus at SR-177 in Desert Center and a northern terminus at the Eagle Mountain Mine. Several other paved and unpaved/unmaintained roads are found in the vicinity. There are no local bus routes, bicycle routes, or railroads in the area.

Blythe Area. Interstate 10 is the major route through the Blythe area where solar projects would be located. It has intersections with two local roads, Neighbours Boulevard (SR 78), east of the Blythe Airport, and Mesa Drive at the airport. The next interchange with I-10 is at Wiley's Well Road, 10 miles west of the airport. Access to any solar project in the area would be from these interchanges along limited local paved and unpaved roads. Remote areas would be accessed by existing or new unpaved roads. As in the Desert Center area, local roads are lightly travelled. There is limited bus transit service.

D.16.2 Applicable Regulations, Plans, and Standards

Construction of the Proposed Project could potentially affect traffic and congestion, transportation ROWs, property access, physical conditions of roads, and parking. Therefore, it would be necessary for the Applicant and/or the construction contractor to obtain encroachment permits or similar legal agreements from the agencies or entity responsible for each affected roadway or transportation ROW. In addition, as part of the overall Special Use Permit application process, the Applicant would be required to obtain approval for encroachments on Bureau of Land Management (BLM) and other landowner roads.

D.16.2.1 Federal

14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace. Construction of a project could potentially impact aviation activities if a structure or equipment were positioned such that it would be a hazard to navigation. The Federal Aviation Administration (FAA) has established reporting requirements for construction or alterations around airport and heliport facilities that meet certain criteria regarding final height above ground level and penetration of an imaginary conical surface extending out from the air facility. With regard to aviation safety, Subpart B, Section 77.9 of the regulations indicates that for areas around airports having runways longer than 3,200 feet, if any construction that is more than 200 feet above ground level or results in an object penetrating an imaginary surface extending outward and upward at a ratio of 100 to 1 from a public or military airport runway out to a horizontal distance of 20,000 feet (approximately 3.78 miles), an applicant is required to submit FAA Form 7460–1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area for review and approval of the project. For areas around heliports, this same requirement applies to any construction that is more than 200 feet above ground level or would penetrate an imaginary surface extending outward and upward at a ratio 25 to 1 from a public or military heliport out to a horizontal distance of 5,000 feet (FAA, 2014).

Advisory Circular AC-133-1A. Advisory Circular AC-133-1A: Rotorcraft External-Load Operations in Accordance with Federal Aviation Regulations Part 133, requires a helicopter pilot to have a FAA External-Load Operator Certificate in order to engage in external load operations.

D.16.2.2 State

California Vehicle Code. The California Vehicle Code (CVC) includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.

California Streets and Highway Code. The California Streets and Highway Code regulates the care and protection of state and county highways, and has provisions for the issuance of permits. Where the Proposed Project would include activities related to the placement of towers, poles, or lines within, under, or over a Caltrans ROW, an encroachment permit must be obtained. To obtain an encroachment permit, all other statutory requirements, including environmental documentation, must be complied with, and applicants must complete a Standard Encroachment Permit Application (TR-0100) with, supporting documentation to the appropriate District Encroachment Permits Office having jurisdictional authority over the proposed encroachment site.

D.16.2.3 Local

Counties and Cities

In California, on non-federal and non-tribal lands, the California Public Utilities Commission (CPUC) has jurisdiction over the siting and design of the Proposed Project because the CPUC regulates and authorizes the construction of investor-owned public utility (IOU) facilities. Although such projects are exempt from local land use and zoning regulations and permitting, General Order (GO) No. 131-D, Section III.C requires "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits." Appendix 9 (Policy Screening Report) identifies county and city plans and policies regarding Transportation and Traffic and other resources of concern to planners. The Appendix indicates policies that are potentially applicable to the Proposed Project and whether the project would be consistent with the plan or policy. These policies are numerous and are not repeated here.

Morongo Tribal Land

The use of the Morongo trust lands is subject to approval by the Morongo Band of Mission Indian's general membership, which consists of all enrolled adult voting members. The Proposed Project would traverse approximately 8 miles of the tribal trust lands east of Banning. Approximately 2 miles of new corridor to replace a section of the existing ROW would be established from near the western boundary of the Morongo tribal lands to Malki Road, otherwise the Proposed Project would use the existing transmission ROW.

The Morongo Band's general membership has voted to approve the Bureau of Indian Affairs' grants to SCE of the rights-of-way and easements necessary for SCE to continue operating its existing 220 kV facilities on the Morongo reservation and to replace and upgrade those facilities with the WOD Project. The approval of these right-of-way grants and easements includes relocating approximately 3 miles of the line west of Malki Road into a new corridor closer to I-10. Therefore, the existing corridor, as modified, would be consistent with all applicable tribal laws.

D.16.3 Environmental Impacts of the Proposed Project

D.16.3.1 Approach to Impact Assessment

The assessment of traffic- and transportation-related impacts from the Proposed Project considered existing surface and transportation facilities in the project vicinity, including road use (traffic levels, pedestrian/bicycle use), public services relying on these facilities (transit and emergency vehicles), rail facilities crossed, access to adjacent properties from roads, and location of airport and heliport facilities. Also considered was the impact of helicopter use during construction. It is unknown when and where project-related traffic would occur on specific roads; therefore, a qualitative approach was taken to assess the impacts of the Proposed Project on traffic and transportation. This was based on the relative volume of current traffic on roads as compared to anticipated levels of project-related traffic, the distribution of work sites throughout the study area, and the nature and location of activities that could require road or lane closures. For air transportation (helicopter use), consideration was given to the location of construction yards from which flights would originate, the carrying of external loads, and the types of work that may involve helicopter use. Helicopter use would have potential impacts on other resources, such as Biological Resources, Air Quality, and Noise. These are addressed in those separate resource sections of this EIS.

D.16.3.1.1 Applicant Proposed Measures

Table D.16-10 presents the Applicant Proposed Measures that SCE has committed to implementing during construction and operation of the Proposed Project. If revision or expansion of any APM is found to be required based on the analysis in this EIS, those changes are explained in Section D.16.3.3 (Impact Analysis).

Table D.16-10. Applicant Proposed Measures – Transportation

APM	Description
APM TRANS-1	SCE would prepare a project specific helicopter use plan to describe anticipated helicopter activities. The helicopter plan will include information related to the types of activities to be conducted by helicopters, locations of and activities to be conducted at helicopter yards, flight and data management procedures, and safety information.

D.16.3.2 Impact Criteria

During scoping, concerns were expressed regarding levels of traffic on local roads, truck routes on the different project segments, the need for SCE to coordinate with local agencies on the construction schedule, and the repair of any damage to local roads. Several commenters requested that the EIS consider the impact of road closures and potential limited access to residential streets and individual residences and businesses.

Based on these criteria, the project or an alternative would impact transportation or traffic if:

- Construction would require the temporary closure of lanes or roadways that would significantly: reduce the performance of the circulation system; create disruption of traffic flow; increase traffic congestion; restrict the movements of emergency vehicles; disrupt bus transit service; impede pedestrian and bicycle movement; and/or restrict access to residences and businesses.
- Vehicle movements associated with construction worker trips or movement of materials and equipment would result in an unacceptable reduction in level of service on the roadways in the project area.
- Construction activities would conflict with planned transportation projects in the project area.
- An increase in roadway wear and deterioration would occur as a result of being used by heavy trucks or construction equipment.
- Construction activities would result in a temporary but substantial disruption of rail traffic.
- Construction or staging activities would increase the demand for or reduce the supply of parking spaces.
- Helicopter use during construction would pose risks to public safety and create excessive noise and dust.
- Project construction cranes or permanent structures would be at heights so as to create aviation hazards or adversely affect airport or heliport facility use.

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27).

D.16.3.3 Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the Proposed Project with regard to Transportation and Traffic. The Proposed Project consists of upgrades to existing substations; transmission, subtransmission, and distribution lines; and telecommunication facilities, and the use of staging yards, all of which could result in various impacts on transportation and traffic. Construction and operational impacts are described below for both surface and air transportation.

Applicant Proposed Measures (APMs) are measures that the Applicant includes in its project description and are considered a project commitment. SCE has not identified any APMs to address surface transportation and traffic impacts. With regard to air transportation, SCE has included APM TRANS-1, as listed in Table D.16-10. However, APM TRANS-1 does not provide sufficient information to assure that helicopter impacts would be adequately addressed and, therefore, is superseded by Mitigation Measure T-7a (Prepare and implement a final helicopter use plan), as discussed below for Impact T-7 (Use of helicopters would have potential impacts on public safety and create nuisance conditions).

SCE has stated that construction activities completed within public-street ROWs would require the use of a traffic control service, and any lane closures would be conducted consistent with local ordinances and ministerial city permit conditions. These traffic control measures would be consistent with those published in the California Joint Utility Traffic Control Manual, which conform to the requirements of the California Vehicle Code and the California Manual on Uniform Traffic Control Devices. Where needed, open trench sections would have steel plates placed over them in order to maintain vehicular and pedestrian traffic. Provisions for emergency vehicle access, where necessary, would be incorporated into the construction plan. However, these statements by SCE are not specified as APMs, and so are incorporated in various mitigation measures below.

Impact T-1: Road or travel lane closures for construction would adversely affect traffic flow and congestion, emergency vehicle response, pedestrians/bicyclists routes, and access to adjacent residential and business properties.

The project would require overhead conductors be strung across regional routes I-10, I-215, and SR-62 as well as numerous local roads. This could require the temporary closure of a road during the stringing operation, which is a short-duration activity. As well, portions of the relocated 69 kV and 12 kV alignments and the telecommunications circuits would be installed underground, requiring trenching or boring in some locations on local roads, which would temporarily close lanes on affected roads until the lines are installed. Where new poles would be installed adjacent to roads or where subtransmission lines or telecommunication lines would be strung on poles adjacent to roads, temporary traffic controls may be required during installation to ensure worker safety. Encroachment permits are required from agencies having jurisdiction over roads; these specify conditions that would apply to any work in the road ROW, including time of day limitations, lane closure and safety requirements, and repairs, among other specifications.

With the exception of possible emergency work, no road or lane closures are anticipated to occur as a result of operating or maintaining the upgraded system.

Traffic Flow and Congestion. During peak morning and evening commute hours, local through roads and regional highways can experience slow or erratic traffic flow and congestion. Road or lane closures would exacerbate this condition. Where required for stringing of conductor across road, road closures typically are limited by jurisdiction having authority over roads to times of off-peak traffic. The stringing operation is of short duration. Where construction work would occur in or adjacent to a road, such as for trenching on boring, depending on the role of the road in the local street network, local authorities may limit the hours during which the construction can occur, requiring that excavations be temporarily covered and lanes opened during certain critical times.

Emergency Services. Road closures could disrupt the operations of emergency service providers. However, in the event that an emergency service provider vehicle were to approach a roadway temporarily blocked for conductor stringing, by complying with California Joint Utility Traffic Control Manual and required Traffic Control Plans (See Mitigation Measure T-1b below) SCE would be able to accommodate the emergency vehicle by immediately stopping work to allow the passage of the emergency vehicle with minimal delay. Road or lane closures for underground work would be of longer duration, but would occur in urban settings where traffic control could be altered to give lanes with emergency vehicles priority. Depending on location, if through traffic flow is hindered alternative routes would be available.

Bus Service. Temporary road closures could disrupt regional or local bus service, depending on bus schedules relative to the time of stringing. However, closures for stringing across major highways and roads would be one-time occurrences lasting a few minutes and would occur on days and at times for which traffic is light, as required by agencies with jurisdiction over the roads. Closures of local roadways would occur during the workday, but also would be limited to a few minutes for each closure. Therefore, stringing activities would not substantially disrupt bus service operations.

Pedestrian/Bicyclist Movement. Temporary impacts to pedestrian and/or bicycle movements could occur in urban areas where pedestrians and bicyclists on roadways would be detoured around specific construction areas where work is occurring. Where stringing would occur, these roadways would likely be blocked for only a few minutes. Where lane or road closures would be required for boring or trenching, pedestrians or bicyclists would be directed to alternate routes. They would be able to take short detours around the blocked area. Construction activities would not be expected to impede pedestrian or bicyclist movements, as pedestrians or bicyclists would be directed around the construction. For reasons of safety, sections of the transmission line ROW currently used for such recreational activities such as walking and bicycling (e.g., in Segments 1 and 4) would be unavailable during construction.

Residence/Business Access. Construction work could limit or block access to a property, curtailing or preventing access to the property and any residences or businesses located on the property. During stringing operations, this would be a temporary, short-duration event. However, when trenching or boring would occur at the point of access to the property, the impact would occur over a longer period and would adversely affect the use of a property or income derived from the use of the property.

Mitigation Measures for Impact T-1: Road or travel lane closures for construction would adversely affect traffic flow and congestion, emergency vehicle response, pedestrians/bicyclists routes, and access to adjacent residential and business properties

T-1a **Prepare Construction Transportation Plan.** Where construction traffic has the potential to significantly affect regional and local roadways by generating additional vehicle trips, SCE shall prepare a Construction Transportation Plan (CTP) describing timing of commutes, methods of reducing crew-related traffic, and other methods for reducing construction-generated additional traffic on regional and local roadways. The CTP also shall require construction workers to park personal vehicles at yards or designated assembly points and carpool to work locations in order to limit the number of construction-related vehicles on the road. At construction sites, vehicles shall be required to park within the project ROW or approved disturbance areas or on access roads to the maximum extent possible. Parking shall not be permitted in areas with dry vegetation that could pose a fire hazard. SCE shall submit the CTP to Caltrans and the affected local jurisdictions for review and approval at least 30 days prior to commencing construction activities.

At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed and shall provide a copy of the final CTP. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached, if any.

T-1b **Prepare Traffic Control Plans.** Prior to the start of construction and as part of the required traffic encroachment permits, SCE shall submit Traffic Control Plans (TCPs) to agencies with jurisdiction over the public roads that would be affected by overhead or underground construction. The measures included in the TCPs shall be consistent with the California Joint Utility Traffic Control Manual and the standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD), and the Work Area Traffic Control Handbook (WATCH).

Road Safety

TCPs shall identify:

- the locations of all roads or traffic lanes that would need to be temporarily closed due to construction activities, including aerial hauling by helicopter and conductor stringing activities
- the use of flag persons, warning signs, lights, barricades, cones, and similar means to provide safe work areas and to warn, control, protect, and expedite vehicular and pedestrian traffic
- use of guard poles, netting, or similar means to protect moving traffic and structures for any construction or installation work requiring the crossing of a local street, highway, or rail line
- the use of continuous traffic breaks operated by the California Highway Patrol on state highways
- measures to avoid disruptions or delays in access for emergency service vehicles (such as immediately stopping work for emergency vehicle passage, short detours, and alternate routes developed in conjunction with local agencies).

Emergency Services

Police departments, fire departments, ambulance services, and paramedic services shall be notified at least 30 days in advance by SCE of the proposed locations, nature, timing, and duration of any construction activities affecting roads and advised of any access restrictions that could impact their effectiveness. TCPs shall also include measures ensuring work crews are ready at all times to accommodate emergency vehicles, such as having the ability to immediately stop work for emergency vehicle passage and implement short detours and alternate routes developed in conjunction with local agencies. TCPs also shall identify all emergency service agencies, include contact information for those agencies, assign responsibility for notifying service providers, and specify coordination procedures.

Copies of the TCPs shall be provided to the CPUC, BLM, Caltrans, the planning or traffic departments of the affected local jurisdictions, and all affected police departments, fire departments, and ambulance and paramedic services. Documentation of coordination with service providers shall be provided to the CPUC and BLM at least 30 days prior to the start of construction.

T-1c **Restrict lane closures.** To minimize traffic congestion and delays during construction, SCE shall restrict all necessary lane closures or obstructions on major roadways (as designated by applicable County and City General Plans) associated with overhead construction activities to off-peak traffic periods. Unless absolutely necessary, lane closures must not occur between the peak hours of 6:00 and 9:00 a.m. and 3:30 and 6:30 p.m., or as directed in writing by the affected public agency in the encroachment permit

T-1d **Minimize disruption of bus and transit service.** SCE shall coordinate with local and regional agencies or organizations providing regular bus or transit service in the project area at least 30 days prior to construction to reduce potential interruption of these services. At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached, if any.

T-1e **Ensure pedestrian and bicycle circulation and safety.** Where construction will result in temporary closures of sidewalks or other pedestrian facilities, SCE shall provide temporary pedestrian access, through detours or safe areas along the construction zone. Where construction activity will result in bike route or bike path closures, appropriate detours shall be established, and detour signs shall be posted. Detours and closures required for safe pedestrian and bicycle access through or around the construction area shall be identified in a circulation plan included in the TCP's required under Mitigation Measure T-1b. All detours and related signage shall be consistent with the standard guidelines outlined in the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD).

T-1f **Provide access to property.** When construction activities block access to a property and the property includes a residence or business, SCE shall work with the property owner, tenant, or business owner to provide reasonable alternate access. If construction involves trenching across or in front of the property's point of access and alternative access is not available, SCE shall lay a temporary steel plate trench bridge as needed and upon request in order to ensure access when not actively constructing at the affected location.

LU-1a **Prepare Construction Notification Plan.** (See Section D.11, Land Use and BLM Realty).

Impact T-2: Traffic related to project construction and operation would result in unacceptable levels of service on roadways in the project area.

No more than about 300 personnel are anticipated to be working on the transmission line on any given day, and they would be dispersed at sites scattered along the length of the project. However, full deployment of the construction equipment also required would require a workforce of 767 (SCE, 2013). This level of effort would not be a daily occurrence.

In addition to the peak-hour trip generation by workers, the transmission line component (the greatest traffic generator of the Proposed Project) would include trips during the work day for the movement of cut-and-fill material, watering for dust control, concrete delivery, disposal of old structures, and delivery of new structures.

Because the work would be outdoors, there would be a seasonal variation in starting and quitting times. To minimize the number of vehicles at a site, workers typically park personal vehicles at project construction or staging yards (see Table B-5 Potential Staging Yard Locations) or other designated sites, from where they carpool or are transported to work sites. Most construction workers typically would arrive at designated staging yards prior to 7:00 a.m., before the a.m. peak commute period. During winter, workers would typically leave prior to 4:00 p.m. During summer, construction workers would typically leave after 6:00 p.m. As a result, many construction worker trips would occur outside of the peak commute periods and have no impact on traffic during the morning (a.m.) and evening (p.m.) peak periods. Construction-related truck traffic delivering materials and equipment would be dispersed throughout the project area and throughout the workday. Therefore, the project-related truck traffic would not result in a substantial impact on traffic conditions in the project area. The construction traffic contributed to local roads would cease with completion of the project.

Transmission line work generally is not sequential along a line, progressing from one end of an alignment to the other; rather, multiple crews would be working at different locations along the alignment performing different tasks at different times. Consequently, transmission line workers would be dispersed throughout the project area using the highways and arterials identified in Tables D.16-1 and D.16-2 and would not occur at the same level from day to day. Given the average daily traffic on these roads without the project, the contribution of the project to the traffic on the regional road network would be minimal.

Both Riverside and San Bernardino Counties identify level of service (LOS) D as the lowest acceptable standard for operation of roadways and intersections within their jurisdictions. Most of the cities in these counties also use LOS D as their standard, but some identify LOS C as their standard. It is expected that no discernible change in the level of service would be observed on roads or at intersections in the project area. Given existing levels of traffic, and that project-related trip generation would be spread throughout the 48-mile project corridor and would cease with the completion of construction, the overall impact of the Proposed Project construction traffic on level of service would be minimal. To ensure this outcome, a construction transportation plan would be required, as specified in Mitigation Measure T-1a.

Once constructed, operation of the proposed transmission line and associated facilities would have negligible impacts on the ground transportation system (roadways and railroads) under normal circumstances. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be similar to the construction impacts addressed above.

Mitigation Measure for Impact T-2 Traffic related to project construction and operation would result in unacceptable levels of service on roadways in the project area.

T-1a Prepare Construction Transportation Plan.

Impact T-3: Construction would conflict with planned transportation projects

The proposed transmission line and other system upgrades would cross numerous roadways/transportation corridors and these construction activities could potentially conflict with improvement projects along one or more of these routes. The public agencies that have jurisdiction over the affected roadways have been notified of the project through the Notice of Preparation/Notice of Intent, and encroachment permits or other such agreements must be obtained for each location where the project would interface with a roadway or other transportation facility. Complying with local permits and agreements would ensure appropriate coordination between SCE and the affected agencies so that conflicts would be avoided or minimized.

Mitigation Measure for Impact T-3: Construction would conflict with planned transportation projects.

T-3a **Avoid conflicts with planned transportation improvements.** Prior to final project design, SCE shall review project plans with Caltrans and local traffic departments or public works departments of the counties and the individual cities through which the proposed transmission route would pass. The review will be conducted to identify planned transportation projects potentially affected, to ensure that Project structures are placed to avoid conflict with any planned transportation projects, and to inform the jurisdictions of the timing and location of any trenching or boring that may affect road surfaces and the flow of traffic. If there are conflicts they shall be addressed through mutual agreement of SCE and the jurisdiction.

At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached.

Impact T-4: Construction vehicles and equipment would potentially damage roads in the project area

Under applicable laws and ordinances, loads are required to not exceed legal weight limits applicable to roads and bridges in the project area. A Caltrans special permit is required for the movement of vehicles/loads exceeding statutory weight and dimension limits. Moving permits from affected local agencies for loads exceeding legal weight and size limits on local roads will also be required. However, the movement of heavy trucks and equipment on roadways providing access to project sites potentially could result in damage to road surfaces, shoulders, curbs, signs, and light standards. Damage and deterioration attributed to the project would need to be repaired.

Mitigation Measure for Impact T-4: Construction vehicles and equipment would potentially damage roads in the project area

T-4a **Repair roadways damaged by construction activities.** If roadways, sidewalks, medians, curbs, shoulders, or other such features are damaged by the project's construction activities, as determined by the affected public agency, such damage shall be repaired and streets restored to their pre-project condition by SCE. Prior to construction, SCE shall confer with agencies having jurisdiction over the roads anticipated to be used by delivery vehicles and equipment. Unless an alternative method for determining roadway condition is required by a given jurisdiction, at least 30 days prior to construction, SCE shall photograph or video record all construction route public roads within 500 feet in each direction of project access points (i.e., locations where vehicles leave public roads to reach project sites) and roadways where the road surface will be damaged by project-related trenching or digging, and shall provide the respective local jurisdictions, CPUC, BLM, and Caltrans (if applicable) with a copy of these images.

At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached.

At the end of major construction, SCE shall coordinate with each affected jurisdiction to confirm what repairs would be required. Any damage shall be repaired to the pre-construction condition within 60 days from the end of all construction, or on a schedule mutually agreed to by SCE and the jurisdiction. SCE shall provide CPUC and BLM confirming documentation when the coordination has been completed and when the repairs have been completed.

Impact T-5: Construction activities would cause a temporary disruption to rail traffic or operations

The Proposed Project would cross the Union Pacific (UP) Railroad and the Burlington Northern Santa Fe (BNSF) Railway in Segment 1 and the Union Pacific Railroad in Segment 4. Transmission line stringing activities over the railroads could temporarily affect rail operations. This adverse effect would be reduced through implementation of Mitigation Measure T-5a.

Mitigation Measures for Impact T-5: Construction activities would cause a temporary disruption to rail traffic or operations

T-5a **Obtain required permits or approvals for crossing or working in railroad rights-of-way.** SCE shall obtain permits/approvals from affected railway operators (Union Pacific Railroad and Burlington Northern Santa Fey Railway) to ensure that project construction activities in the rail ROW comply with each company's safety requirements and to avoid disruption to rail traffic. Copies of required permits or approvals shall be submitted to the CPUC and BLM prior to construction in or across rail ROWs.

Impact T-6: Construction would result in the short-term elimination of parking spaces

The Proposed Project could result in the short-term elimination of existing parking spaces associated with the Desert Hills Premium Outlets near I-10 in Segment 5 and, depending on construction activity, along roadways throughout the project area. Except for occasional restrictions on street parking during pole installations, during trenching or boring sites, or during conductor stringing across roadways, no other short-term elimination of parking is anticipated. This adverse effect would be reduced through implementation of Mitigation Measure T-6a.

Mitigation Measures for Impact T-6: Construction would result in the short-term elimination of parking spaces.

T-6a **Notify public of short-term elimination of public parking spaces.** As required in Mitigation Measure LU-1a, prior to construction activity on major roadways, using media such as local newspapers and on-site postings, SCE shall notify the public of the potential for public parking spaces to be temporarily eliminated and identify where temporary parking spaces would be located. This requirement shall apply when more than five parking spaces are affected. The elimination of parking and location of alternative parking must be in conformance with the requirements of agencies responsible for parking management.

Impact T-7: Use of helicopters would have potential impacts on public safety and create nuisance conditions.

SCE has identified that some helicopter-based deconstruction of existing towers, poles, and associated equipment and conductors may occur but that helicopter-based transmission structure construction is not anticipated to be required. However, SCE anticipates that helicopter delivery of equipment and materials from construction staging yards to transmission structure sites may occur and that helicopters may be used for hardware installation and during conductor and optical ground wire (OPGW) stringing operations. SCE also has noted that, depending on final engineering, helicopter-based construction may be required if (1) a site is inaccessible by a crane and/or (2) the contractor selected to undertake the project selects helicopter use as one of the means to be used to execute the work. Therefore, to be conservative, this EIS considers that helicopters may be used in all aspects of the project. A preliminary helicopter use plan was submitted by SCE (see Attachment D.16-1 at the end of this section). Mitigation Measure T-7a (Prepare and implement a final helicopter use plan) supersedes SCE's APM TRANS-1.

During operations, helicopters would be used for periodic line inspections and for insulator cleaning.

Mitigation Measures for Impact T-7: Use of helicopters would have potential impacts on public safety and wildlife, and create disturbance.

T-7a **Prepare and implement a final helicopter use plan.** SCE and its contractor shall prepare and obtain approval of a Final Helicopter Use Plan prior to using helicopters to transport personnel, materials, or equipment for the deconstruction of existing project facilities or construction of new or replacement project facilities. The Final Helicopter Use Plan shall draw upon protocols and methods used on previous transmission line projects and shall be submitted to CPUC and BLM for approval.

The Federal Aviation Agency (FAA) has jurisdiction over U.S. airspace, aircraft, aircraft operations, airports, and pilots. To the extent that they do not conflict with any FAA requirements, the following shall apply to helicopter use and be incorporated in the Final Helicopter Use Plan.

- All aircraft and pilots shall be in full compliance with applicable FAA requirements and standards.
- On the prior day, helicopter flight information shall be provided to CPUC/BLM monitors regarding the specific sites to be used for helicopter picks and the destination of the materials or assemblages being lifted out.
- Daily flight notifications shall be issued by e-mail prior to commencement of any project flight activity. Information provided in the e-mail shall include pilot name, contact number, aircraft type, aircraft registration number, aircraft color, work/flight area, beginning time, estimated completion time, and scope of work. This information will be provided to CPUC/BLM monitors as well.
- The specific facilities, towers, poles, and spans requiring deconstruction or construction using helicopters shall be identified.
- Temporary staging of materials and assembly of tower sections outside of approved yards shall not occur without prior approval of CPUC or BLM, as appropriate.
- The yards to and from which helicopters would fly (fly yards) shall be identified and shall be of sufficient size to ensure safe operations, given the other activities occurring at the yards and the vicinity.
- Fly yards shall be sufficiently far from occupied residences to not create an unacceptable level of noise or dust.
- The means used for dust and noise control and for safe refueling shall be specified for each fly yard.
- Flight paths that minimize flights near schools, hospitals, nursing homes, and other sensitive group receptors shall be identified and followed.
- Except in an emergency, helicopters shall land or hover near the ground only in areas previously approved for landing, and all dust control and biological and cultural resource protection requirements shall apply.
- External loads will be secured by appropriate rigging, including boxing, netting, choking, and cabling, or other suitable means. Only qualified riggers shall prepare and attach external

loads to helicopters, and rigging shall be appropriate to the nature of the load, including the use of devices as necessary to prevent materials being lost in flight. Where appropriate to reduce load in-flight spinning and movement, drag chutes will be attached to loads. The need for drag chutes will be determined by the pilot and rigging personnel, where appropriate. At locations where rigging is to occur, a sufficient supply of appropriate rigging and containment materials in good repair shall be on hand at all times.

- All aircraft are to be configured with weight sensors such that, when preparing to haul external loads, the pilot is able to determine the weight of the load being lifted.
- Yards or landing zones shall have a designated qualified individual managing the movement of aircraft in and out of the yard or landing zone when flight activity is high.
- Appropriate protocols for communication among pilots and between pilots and the ground shall be developed and implemented.
- A GPS-based data system shall be installed in each aircraft
  - The system shall identify for the pilot all project-approved project flight paths and those areas where overflights are restricted (such as seasonally restricted bird nesting areas and sensitive residential or institutional areas), and shall be updated as often as any flight restrictions are implemented or lifted.
  - The system shall automatically record and preserve flight data sufficient to identify the aircraft's flight path, including altitude above ground. The system shall be capable of providing the information required with regard to flight path and aircraft identifier, and provide a location "ping" no less frequently the once every 3 seconds. These data shall be collected daily and maintained by SCE or its contractor for a period of no less than six months and made available to CPUC or BLM upon request.

The Helicopter Use Plan shall be submitted to CPUC and BLM for review and approval at least 60 days prior to the use of helicopters on the project. Once the Helicopter Use Plan is made final, a copy shall be provided as a courtesy to each jurisdiction through which the Project passes.

Impact T-8: Operations would affect aviation safety and activities associated with public airports

The presence of new towers or poles within 20,000 feet of San Bernardino International Airport and Banning Municipal Airport could potentially affect aviation activities because some towers or poles would extend through an imaginary surface extending outward and upward from the airport runways at a ratio of 100 to 1. As well, any towers or poles greater than 200 feet above ground level and conductor spans in some locations could pose aviation hazards. Adherence to FAA guidelines would be required with regard to both the height of facilities and any safety devices to be installed on facilities. Pursuant to FAA guidelines, SCE is required to submit FAA Form 7460–1, Notice of Proposed Construction or Alteration, to the Manager of the FAA Air Traffic Division for review and approval of the project. FAA will identify what structures pose hazards and will specify any safety devices that may be required and whether any tower or pole heights would be restricted. Implementation of Mitigation Measure T-8a would reduce the severity of this adverse effect.

Mitigation Measure for Impact T-8: Operations would affect aviation safety and activities associated with public airports

T-8a **Obtain FAA review and approval of all structures and spans posing potential aircraft safety hazards.** SCE shall submit the required forms and information to FAA for its review and approval of transmission structures and conductor spans that may require installation of safety devices or other restrictions. Copies of FAA's review and approval shall be provided to CPUC and BLM at least 60 days prior to erection of structures or installation of conductors that would be in violation of FAA standards and requirements. These structures and spans shall be identified to CPUC and BLM, and the planned installation of required lighting and marker balls described.

D.16.3.4 Impacts of Connected Actions

Because of their remote locations, large solar projects would not result in all of the impacts that would occur with development of a high-voltage transmission project in a mixed urban, suburban, and rural environment. Those impacts identified for the Proposed Project that are not expected to occur for the connected action projects include: Impacts T-5 (Construction activities would cause a temporary disruption to rail traffic or operations), T-6 (Construction would result in the short-term elimination of parking spaces), T-7 (Use of helicopters would have potential impacts on public safety and create nuisance conditions), and T-8 (Operations would affect aviation safety and activities associated with public airports). The 4 impacts expected to occur due to construction and operation of the connected actions for transportation and traffic are discussed below without differentiating the geographic areas, since the impact descriptions would be similar for each area.

Impact T-1: Road or travel lane closures for construction would adversely affect traffic flow and congestion, emergency vehicle response, pedestrians/bicyclists routes, and access to adjacent residential and business properties

The defined solar projects would be located in sparsely populated or remote areas. None of the identified connected solar projects are expected to require road closures except possibly briefly, while stringing gen-tie line conductor across roads, which would create a temporary delay if traffic were present. This would not affect emergency vehicle response, as operations could cease until emergency vehicles pass.

Use of pedestrian/bicycle routes, if any, and access to residential and business properties is not anticipated to be affected due to the low density of the development areas. However, construction traffic has the potential to affect regional and local roadways by generating additional vehicle trips. This could result in backups at interchanges and intersections through which traffic would flow to reach work sites. Typical measures to address this impact include preparation of construction transportation plans (which may include carpooling requirements) and traffic control plans (which would manage traffic in and out of sites and provide for alternate access if a property is blocked by project activities).

Impact T-2: Traffic related to project construction and operation would result in unacceptable levels of service on roadways in the project area

Most of the identified solar projects would be in areas with little local traffic and all would be in reasonable proximity to I-10, a major interstate freeway. While construction of the projects would increase the level of traffic on I-10 at peak activity levels, this would not be a significant increase as compared to existing road capacity and traffic levels.

Impact T-3: Construction would conflict with planned transportation projects

Because of their remote locations, the connected solar projects are unlikely to conflict with planned transportation projects. However, prior to construction, project proponents would coordinate traffic management with agencies having jurisdiction over local roads. This would provide an opportunity for the parties to identify any planned transportation projects and discern any potential impacts of the solar project on planned transportation projects.

Impact T-4: Construction vehicles and equipment would potentially damage roads in the project area

Vehicle and equipment required for construction of solar projects can result in damage to roads and shoulders in the vicinity of the projects. Generally, this is the result of heavy loads, rather than light vehicle traffic. Typical measures to address this impact include implementing a traffic control plan that specifies routes to be used for equipment and material deliveries and an agreement to document road conditions at the beginning and end of construction, and to repair the roads or contribute a fair share of the repair cost.

D.16.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.16.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

The transportation and traffic setting within the ROW is described by segment in Section D.16.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.16.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Eight impacts related to transportation and traffic were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative. With the exception of the relocated transmission towers described above and in Appendix 5, this alternative otherwise would be the same as the Proposed Project. The full text of all mitigation measures referenced in this section is presented in Section D.16.3.3, except where otherwise noted.

Impact T-1: Road or travel lane closures for construction would adversely affect traffic flow and congestion, emergency vehicle response, pedestrians/bicyclists routes, and access to adjacent residential and business properties

The tower relocations under this alternative would occur within the existing ROW and would not directly affect any roadways. No road or travel land closures would be required by the relocation. Impacts from relocating selected towers approximately 50 feet north of their proposed positions would be the same as impacts from the Proposed Project at these locations. Impacts of relocating towers, including all project elements as proposed elsewhere not modified by the alternative, would be addressed by implementation of Mitigation Measures T-1a (Prepare Construction Transportation Plan), T-1b (Prepare Traffic Control Plans, T-1c (Restrict lane closures), T-1d (Minimize disruption of bus and transit service), T-1e (Ensure pedestrian and bicycle circulation and safety), T-1f (Provide access to property), and LU-1a (Prepare Construction Notification Plan).

Impact T-2: Traffic related to project construction and operation would result in unacceptable levels of service on roadways in the project area

Personnel working on the transmission line on any given day would be dispersed at sites scattered along the length of the project. In addition to the peak-hour trip generation by workers, the transmission line component (the greatest traffic generator of the Proposed Project) would include trips during the work day for the movement of cut-and-fill material, watering for dust control, concrete delivery, disposal of old structures, and delivery of new structures. These requirements relative to the relocated towers would be the same under the Proposed Project or the Tower Relocation Alternative.

The repositioning of selected towers would not result in additional project-related traffic. The effect on traffic would be the same as under the Proposed Project. The same number of personnel and the same types of equipment would be required for site preparation and tower construction at the relocation sites as would be required at the originally proposed tower sites.

Impact T-3: Construction would conflict with planned transportation projects

The relocated towers are not on public roads and would not conflict with planned transportation projects. They would be in nominally different locations from the proposed tower locations but still within the ROW. Avoidance of potential conflicts would be accomplished with implementation of Mitigation Measure T-3a (Avoid conflicts with planned transportation improvements), which would require coordination with transportation authorities in the project vicinity to ensure conflicts do not occur.

Impact T-4: Construction vehicles and equipment would potentially damage roads in the project area

The use of roads in the project area would be the same under both the Proposed Project and the Tower Relocation Alternative. Vehicles, equipment, and materials would reach the relocation sites using the same roadways as would be used to reach the tower sites originally proposed. Therefore, any potential damage to roads would be the same under both the Proposed Project and the alternative. Mitigation Measure T-4a (Repair roadways damaged by construction activities) would apply under both the Proposed Project and the alternative, ensuring that road damage from construction vehicles is repaired.

Impact T-5: Construction activities would cause a temporary disruption to rail traffic or operations

There are no rail lines in the vicinity of the relocated towers. Impacts on rail traffic or operations would be the same under the Proposed Project and the project with the alternative incorporated. Mitigation Measure T-5a (Obtain required permits or approvals for crossing or working in railroad rights-of-way) would apply.

Impact T-6: Construction would result in the short-term elimination of parking spaces

No parking spaces would be affected by the tower relocations. Impacts on parking elsewhere related to project construction would be the same as for the Proposed Project, and Mitigation Measure T-6a (Notify public of short-term elimination of public parking spaces) would be implemented.

Impact T-7: Use of helicopters would have potential impacts on public safety and create nuisance conditions

SCE has identified that some helicopter-based deconstruction of existing towers, poles, and associated equipment and conductors may occur but that helicopter-based transmission structure construction is not anticipated to be required. However, SCE anticipates that helicopter delivery of equipment and materials from construction staging yards to transmission structure sites may occur and that helicopters may be used for hardware installation and during conductor and optical ground wire (OPGW) stringing operations.

Construction methods for the relocated towers have not been specified. Because the relocations are near the original proposed replacement tower sites, it is assumed that the construction methods would be similar. If helicopters are used, the same requirements would apply to the Proposed Project and the Tower Relocation Alternative. SCE would be required to implement Mitigation Measure T-7a (Prepare and implement a final helicopter use plan), which would be subject to CPUC and BLM approval and would specify flight and cargo carrying requirements that would protect public safety and minimize nuisances.

Impact T-8: Operations would affect aviation safety and activities associated with public airports

The towers that would be relocated under this alternative are not near public airports. However, towers elsewhere in the project ROW would be near an airport. The impact of the Proposed Project and the project with the alternative incorporated would be the same with regard to aviation safety. Towers and the conductor spans can pose hazards to aircraft. Implementation of Mitigation Measure T-8a (Obtain FAA review and approval of all structures and spans posing potential aircraft safety hazards) would address this by requiring SCE to obtain FAA approval of tower locations. FAA would determine what restrictions may apply and whether specific towers and spans would require safety devices.

D.16.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Eight impacts were identified under the Proposed Project for transportation and traffic. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.9.16.3, except where otherwise noted.

Impact T-1: Road or travel lane closures for construction would adversely affect traffic flow and congestion, emergency vehicle response, pedestrians/bicyclists routes, and access to adjacent residential and business properties

Undergrounding a segment of the 66 kV line in Iowa Street would increase the total amount of roadway affected by road or lane closures, as compared to the Proposed Project. Trenching in Iowa Street would require a land closure to provide the required work area. The work would be in Redlands, in an area having a grid road pattern with roads 0.25 miles apart. In the work area, Iowa Street is both 2-and 3-lanes wide. Barton Road is 4 lanes with a median and bike path. Where lane closures are required, appropriate traffic management and controls would be needed. These controls would be defined in Mitigation Measures T-1a (Prepare Construction Transportation Plan), T-1b (Prepare Traffic Control Plans), T-1c (Restrict lane closures), T-1d (Minimize disruption of bus and transit service), T-1e (Ensure pedestrian and bicycle circulation and safety), T-1f (Provide access to property), and L-1a (Prepare construction notification plan), which would be required.

Impact T-2: Traffic related to project construction and operation would result in unacceptable levels of service on roadways in the project area

Construction in Iowa Street is expected to temporarily close one lane. Construction across Orange Avenue and Barton Road would require lane closures and diversions. Similar lane closures would be required likely during installation of poles and conductor under the Proposed Project, but would be shorter in duration. Lane closures under this alternative could adversely affect traffic flow on Iowa Street, Orange Avenue, and Barton Road, leading to delays during the period when lanes are closed for trenching and conduit installation. The impact would end with completion of construction. To reduce the number of personal vehicle miles travelled by workers, Mitigation Measure T-1a (Prepare construction transportation plan) would be required. The impact on levels of service in the project area would be similar for both the Proposed Project and the alternative (which includes all other components as proposed for the entire project except the overhead segment on Iowa Street).

Impact T-3: Construction would conflict with planned transportation projects

No known transportation projects are planned on Iowa Street, Orange Avenue, or Barton Road in the vicinity of the underground segment. This could change in the future if transportation projects are proposed that would overlap with the transmission line work. Mitigation Measure T-3a (Avoid conflicts with planned transportation improvements) requires that potential conflicts with planned transportation improvements be avoided through coordination with the appropriate jurisdictions and agencies

Impact T-4: Construction vehicles and equipment would potentially damage roads in the project area

Trenching to install the underground segment would damage the road surface. SCE would be required to repair roads to their previous condition under Mitigation Measure T-4a (Repair roadways damaged by construction activities).

Impact T-5: Construction activities would cause a temporary disruption to rail traffic or operations

There are no rail lines in the vicinity of the underground segment in this alternative. Impacts on rail traffic and operations would be the same under the Proposed Project and the project with the alternative incorporated. Mitigation Measure T-5a (Obtain required permits or approvals for crossing or working in railroad rights-of-way) would be required for the Proposed Project and the alternative, which would be identical to the project in all other respects except for the underground segment in Iowa Street.

Impact T-6: Construction would result in the short-term elimination of parking spaces

Little street parking was observed on Iowa Street in the area of the underground alternative. Commercial establishments along the road have parking lots. The few residences fronting on the street have driveways that could accommodate parking for the residence. Closure of one lane of Iowa Street along the curb would temporarily eliminate potential parking along the street, but sufficient alternative parking is located nearby. Because other areas through which the project would pass could experience short-term elimination of parking, Mitigation Measure T-6a (Notify public of short-term elimination of public parking spaces) would be required. The impact on parking would be the same for the alternative and for the Proposed Project.

Impact T-7: Use of helicopters would have potential impacts on public safety and create nuisance conditions

No use of helicopters along the Iowa Street portion of the project is anticipated. Because helicopters would be used elsewhere on the project, Mitigation Measure T-7a (Prepare and implement a final helicopter use plan) would be required of SCE. This would address public safety and nuisance conditions for the Proposed Project and those portions of the alternative that are not on Iowa Street.

Impact T-8: Operations would affect aviation safety and activities associated with public airports

The Iowa Street portion of the project is not near a public airport, and undergrounding a segment of line would not affect aviation safety. The effect on aviation would be similar under both the Proposed project and the alternative. Because portions of the Proposed Project not on Iowa Street would be near an airport in other areas, Mitigation Measure T-7a (Prepare and implement a final helicopter use plan) would be required of SCE. This would address public safety and nuisance conditions for the Proposed Project and those portions of the alternative that are not on Iowa Street; Mitigation Measure T-8a (Obtain FAA review and approval of all structures and spans posing potential aircraft safety hazards) would be required.

D.16.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Eight impacts were identified under the Proposed Project for transportation and traffic. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.9.16.3, except where otherwise noted.

Impact T-1: Road or travel lane closures for construction would adversely affect traffic flow and congestion, emergency vehicle response, pedestrians/bicyclists routes, and access to adjacent residential and business properties

The project would require overhead conductors be strung across regional routes I-10, I-215, and SR-62 as well as numerous local roads. This could require the temporary closure of a road during the stringing operation, which is a short-duration activity. As well, portions of the relocated 69 kV and 12 kV alignments and the telecommunications circuits would be installed underground, requiring trenching or boring in some locations on local roads, which would temporarily close lanes on affected roads until the lines are installed. Where new poles would be installed adjacent to roads or where subtransmission lines or telecommunication lines would be strung on poles adjacent to roads, temporary traffic controls may be required during installation to ensure worker safety. Encroachment permits are required from agencies having jurisdiction over roads; these specify conditions that would apply to any work in the road ROW, including time of day limitations, lane closure and safety requirements, and repairs, among other specifications.

With the exception of possible emergency work, no road or lane closures are anticipated to occur as a result of operating or maintaining the upgraded system.

Traffic Flow and Congestion. During peak morning and evening commute hours, local through roads and regional highways can experience slow or erratic traffic flow and congestion. Road or lane closures would exacerbate this condition. Where required for stringing of conductor across road, road closures typically are limited by jurisdiction having authority over roads to times of off-peak traffic. The stringing operation is of short duration. Where construction work would occur in or adjacent to a road, such as for trenching on boring, depending on the role of the road in the local street network, local authorities may limit the hours during which the construction can occur, requiring that excavations be temporarily covered and lanes opened during certain critical times.

Emergency Services. Road closures could disrupt the operations of emergency service providers. However, in the event that an emergency service provider vehicle were to approach a roadway temporarily blocked for conductor stringing, by complying with California Joint Utility Traffic Control Manual and required Traffic Control Plans SCE would be able to accommodate the emergency vehicle by immediately stopping work to allow the passage of the emergency vehicle with minimal delay. Road or lane closures for underground work would be of longer duration, but would occur in urban settings where traffic control could be altered to give lanes with emergency vehicles priority. Depending on location, if through traffic flow is hindered alternative routes would be available.

Bus Service. Temporary road closures could disrupt regional or local bus service, depending on bus schedules relative to the time of stringing. However, closures for stringing across major highways and roads would be one-time occurrences lasting a few minutes and would occur on days and at times for which traffic is light, as required by agencies with jurisdiction over the roads. Closures of local roadways would occur during the workday, but also would be limited to a few minutes for each closure. Therefore, stringing activities would not substantially disrupt bus service operations.

Pedestrian/Bicyclist Movement. Temporary impacts to pedestrian and/or bicycle movements could occur in urban areas where pedestrians and bicyclists on roadways would be detoured around specific construction areas where work is occurring. Where stringing would occur, these roadways would likely be blocked for only a few minutes. Where lane or road closures would be required for boring or trenching, pedestrians or bicyclists would be directed to alternate routes. They would be able to take short detours around the blocked area. Construction activities would not be expected to impede pedestrian or bicyclist movements, as pedestrians or bicyclists would be directed around the construction. For reasons of safety, sections of the transmission line ROW currently used for such recreational activities such as walking and bicycling (e.g., in Segments 1 and 4) would be unavailable during construction.

Residence/Business Access. Construction work could limit or block access to a property, curtailing or preventing access to the property and any residences or businesses located on the property. During stringing operations, this would be a temporary, short-duration event. However, when trenching or boring would occur at the point of access to the property, the impact would occur over a longer period and would adversely affect the use of a property or income derived from the use of the property.

Under the Phased Build Alternative, high-capacity conductors would be installed on a combination of new and existing 220 kV structures. This alternative would reduce the amount of construction activity compared to the Proposed Project, and consequently would reduce the number and duration of road or travel lane closures. The reconductored structures in this alternative would occur within the existing ROW and would not directly affect any roadways. While construction activities associated with this alternative could require road or travel lane closures, the severity of this adverse effect would be reduced compared to the Proposed Project due to the reduction in construction activities. Adverse traffic effects associated with this alternative would be addressed by implementation of Mitigation Measures T-1a (Prepare Construction Transportation Plan), T-1b (Prepare Traffic Control Plans, T-1c (Restrict lane closures), T-1d (Minimize disruption of bus and transit service), T-1e (Ensure pedestrian and bicycle circulation and safety), T-1f (Provide access to property), and LU-1a (Prepare Construction Notification Plan).

Impact T-2: Traffic related to project construction and operation would result in unacceptable levels of service on roadways in the project area

Personnel working on the transmission line on any given day would be dispersed at sites scattered along the length of the project. In addition to the peak-hour trip generation by workers, the transmission line component (the greatest traffic generator of the Proposed Project) would include trips during the work day for the movement of cut-and-fill material, watering for dust control, concrete delivery, disposal of old structures, and delivery of new structures.

To minimize the number of vehicles at a site, workers typically park personal vehicles at project construction or staging yards (see Table B-5 Potential Staging Yard Locations) or other designated sites, from where they carpool or are transported to work sites. Most construction workers typically would arrive at designated staging yards prior to 7:00 a.m., before the a.m. peak commute period. During winter, workers would typically leave prior to 4:00 p.m. During summer, construction workers would typically leave after 6:00 p.m. As a result, many construction worker trips would occur outside of the peak commute periods and have no impact on traffic during the morning (a.m.) and evening (p.m.) peak periods. Construction-related truck traffic delivering materials and equipment would be dispersed throughout the project area and throughout the workday. Therefore, the project-related truck traffic would not result in a substantial impact on traffic conditions in the project area. The construction traffic contributed to local roads would cease with completion of the project.

Transmission line work generally is not sequential along a line, progressing from one end of an alignment to the other; rather, multiple crews would be working at different locations along the alignment performing different tasks at different times. Consequently, transmission line workers would be dispersed throughout the project area and would not occur at the same level from day to day. Given the average daily traffic on roads in the region, the contribution of the project to the traffic on the regional road network would be minimal.

Because of the dispersed nature of the work, it is expected that no discernible change in the level of service would be observed on roads or at intersections in the project area. Given existing levels of traffic, and that project-related trip generation would be spread throughout the 48-mile project corridor and would cease with the completion of construction, the overall impact of construction traffic on level of service would be minimal.

Once constructed, operation of the proposed transmission line and associated facilities would have negligible impacts on the ground transportation system (roadways and railroads) under normal circumstances. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be similar to the construction impacts addressed above.

The Phased Build Alternative would reduce the amount of construction activity compared to the Proposed Project, and consequently would reduce the amount of peak-hour trip generation by workers and trips during the work day for the movement of cut-and-fill material, watering for dust control, concrete delivery, disposal of old structures, and delivery of new structures. The impact would end with completion of construction. Traffic delays and adverse effects to levels of service on roadways in the project area are expected to be minor for this alternative. To reduce the number of personal vehicle miles travelled by workers, Mitigation Measure T-1a (Prepare construction transportation plan) would be required. The impact on levels of service in the project area would be similar for both the Proposed Project and the alternative (which includes less overall construction than the Proposed Project).

Impact T-3: Construction would conflict with planned transportation projects

The transmission line and other system upgrades would cross numerous roadways/transportation corridors and these construction activities could potentially conflict with improvement projects along one or more of these routes.

The Phased Build Alternative would be constructed in the same ROW as the Proposed Project. The amount of construction activity would be reduced because one set of 220 kV structures would be left in place. The reconductored transmission line on both new and existing structures and other system upgrades in this alternative would cross numerous roadways/transportation corridors and construction of these components could potentially conflict with improvement projects along one or more of these routes. The public agencies that have jurisdiction over the affected roadways have been notified of the project through the Notice of Preparation/Notice of Intent, and encroachment permits or other such agreements must be obtained for each location where the project would interface with a roadway or other transportation facility. Compliance with local permits and agreements would ensure appropriate coordination between SCE and the affected agencies so that conflicts would be avoided or minimized. Avoidance of potential conflicts would be accomplished with implementation of Mitigation Measure T-3a (Avoid conflicts with planned transportation improvements), which would require coordination with transportation authorities in the project vicinity to ensure that conflicts do not occur.

Impact T-4: Construction vehicles and equipment would potentially damage roads in the project area

Under applicable laws and ordinances, loads are required to not exceed legal weight limits applicable to roads and bridges in the project area. A Caltrans special permit is required for the movement of vehicles/loads exceeding statutory weight and dimension limits. Moving permits from affected local agencies for loads exceeding legal weight and size limits on local roads will also be required. However, the movement of heavy trucks and equipment on roadways providing access to project sites potentially could result in damage to road surfaces, shoulders, curbs, signs, and light standards.

The use of roads in the project area would be reduced in this alternative compared to the Proposed Project. Vehicles, equipment, and materials would reach the new and existing reconductoring sites using the same roadways that would be used to reach the tower sites originally proposed. Therefore, any potential damage to roads would be similar to the Proposed Project but reduced in severity due to the reduction in construction activity. Mitigation Measure T-4a (Repair roadways damaged by construction activities) would apply under both the Proposed Project and this alternative, ensuring that road damage from construction vehicles would be repaired.

Impact T-5: Construction activities would cause a temporary disruption to rail traffic or operations

The Proposed Project would cross the Union Pacific (UP) Railroad and the Burlington Northern Santa Fe (BNSF) Railway in Segment 1 and the Union Pacific Railroad in Segment 4. Transmission line stringing activities over the railroads could temporarily affect rail operations.

The same as in the Proposed Project, the Phased Build Alternative would cross the Union Pacific (UP) Railroad and the Burlington Northern Santa Fe (BNSF) Railway in Segment 1 and the Union Pacific Railroad in Segment 4. Reconductoring activities for new and existing structures over the railroads could temporarily affect rail operations. Mitigation Measure T-5a (Obtain required permits or approvals for crossing or working in railroad rights-of-way) would be required for the Proposed Project and this alternative, which would cross the same rail lines.

Impact T-6: Construction would result in the short-term elimination of parking spaces

The Proposed Project could result in the short-term elimination of existing parking spaces associated with the Desert Hills Premium Outlets near I-10 in Segment 5 and, depending on construction activity, along roadways throughout the project area. Except for occasional restrictions on street parking during pole installations, during trenching or boring sites, or during conductor stringing across roadways, no other short-term elimination of parking is anticipated.

This alternative also could result in the short-term elimination of existing parking spaces along roadways throughout the project area. Except for occasional restrictions on street parking during pole installations, during trenching or boring site work, or during conductor stringing across roadways, no other short-term elimination of parking is anticipated. Due to the reduction in construction activities, the short-term elimination of parking spaces would be reduced compared to the Proposed Project. Mitigation Measure T-6a (Notify public of short-term elimination of public parking spaces) would be required to reduce the severity of this adverse effect.

Impact T-7: Use of helicopters would have potential impacts on public safety and create nuisance conditions

Some helicopter-based deconstruction of existing towers, poles, and associated equipment and conductors may occur, but helicopter-based transmission structure construction is not anticipated to be required. However, SCE anticipates that helicopter delivery of equipment and materials from construction staging yards to transmission structure sites may occur and that helicopters may be used for hardware installation and during conductor and optical ground wire (OPGW) stringing operations. Depending on final engineering, helicopter-based construction may be required if (1) a site is inaccessible by a crane and/or (2) the contractor selected to undertake the project selects helicopter use as one of the means to be used to execute the work. Therefore, to be conservative, this EIS considers that helicopters may be used in all aspects of the project. A preliminary helicopter use plan was submitted by SCE (see Attachment D.16-1 at the end of this section). During operations and maintenance, helicopters would be used for periodic line inspections and for insulator cleaning.

Although construction activity would be reduced in this alternative compared to the Proposed Project, it is assumed that the construction methods would be similar. If helicopters are used, the same requirements would apply to this alternative as in the Proposed Project. SCE would be required to implement Mitigation Measure T-7a (Prepare and implement a final helicopter use plan), which would be subject to CPUC and BLM approval and would specify flight and cargo carrying requirements that would protect public safety and minimize nuisances.

Impact T-8: Operations would affect aviation safety and activities associated with public airports

The presence of new towers or poles within 20,000 feet of San Bernardino International Airport and Banning Municipal Airport could potentially affect aviation activities because some towers or poles would extend through an imaginary surface extending outward and upward from the airport runways at a ratio of 100 to 1. As well, any towers or poles greater than 200 feet above ground level and conductor spans in some locations could pose aviation hazards. Adherence to FAA guidelines would be required with regard to both the height of facilities and any safety devices to be installed on facilities. Pursuant to FAA guidelines, SCE is required to submit FAA Form 7460–1, Notice of Proposed Construction or Alteration, to the Manager of the FAA Air Traffic Division for review and approval of the project. FAA will identify what structures pose hazards and will specify any safety devices that may be required and whether any tower or pole heights would be restricted.

Although the exact location of structures in this alternative would differ compared to the Proposed Project, the structures would be located in the same ROW and would be of a comparable height. The impact of the Proposed Project and this alternative would be the same with regard to aviation safety. Towers and the conductor spans can pose hazards to aircraft. Implementation of Mitigation Measure T-8a (Obtain FAA review and approval of all structures and spans posing potential aircraft safety hazards) would address this adverse effect by requiring SCE to obtain FAA approval of tower locations. FAA would determine what restrictions may apply and whether specific towers and spans would require safety devices.

D.16.5 Environmental Impacts of No Action Alternative

D.16.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

No Action Alternative Transmission Lines and Beaumont Substation. The No Action Alternative Option 1 would primarily traverse remote and rural areas south of Interstate 10. The area has relatively few local roads and highways. There would be little or no opportunity for disrupting train and transit routes. During stringing operations across roads and highways, traffic would be controlled. Construction access to the substation site would be from Highway 79 (Beaumont Avenue) approximately 1 mile south of its interchange with I-10. Construction of remote sections of the transmission line likely would involve use of helicopters, as was the case in construction of the Devers-Valley 500 kV line. To minimize impacts, a traffic control plan, transportation plan, and helicopter use plan would be needed. Also, coordination with Caltrans, local roads departments, transit service providers, and rail roads would be needed to ensure minimal disruption. In the Devers to Valley segment of DPV2, the EIR/EIS identified that impacts on transportation from construction of the transmission line would be less than significant.

D.16.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b.

With the exception of the urban areas in the Perris Valley at the eastern end of the route and the City of Orange at the western end of the route, the No Action Alternative Option 2 corridor traverses mostly rural and sparsely populated land. The corridor crosses two interstate highways and two state routes. In the east, the route crosses Interstate 215 at approximately MP 1.9 and SR 74 at approximately MP 7.4. Towards the center of the route, the corridor crosses Interstate 15 at approximately MP 20.6, just east of the Cleveland National Forest. At the western end, the corridor crosses SR 241 at approximately MP 36.2, just east of the City of Orange. Other than the interstate highways and state routes described above, the area has relatively few local roads and highways. There would be little or no opportunity for disrupting train and transit routes. During stringing operations across roads and highways, traffic would be controlled. Most of the route would be in or adjacent to the existing ROW, and would likely utilize existing access roads. Mitigation requirements would be the same as for Option 1.

D.16.6 Mitigation Monitoring, Compliance, and Reporting

Table D.16-11 presents the mitigation monitoring, compliance, and reporting actions for transportation and traffic.

Table D.16-11. Mitigation Monitoring Program – Transportation & Traffic

MITIGATION MEASURE	**T-1a: Prepare Construction Transportation Plan.** Where construction traffic has the potential to significantly affect regional and local roadways by generating additional vehicle trips, SCE shall prepare a Construction Transportation Plan (CTP) describing timing of commutes, methods of reducing crew-related traffic, and other methods for reducing construction-generated additional traffic on regional and local roadways. The CTP also shall require construction workers to park personal vehicles at yards or designated assembly points and carpool to work locations in order to limit the number of construction-related vehicles on the road. At construction sites, vehicles shall be required to park within the project ROW or approved disturbance area or on access roads to the maximum extent possible. Parking shall not be permitted in areas with dry vegetation that could pose a fire hazard. SCE shall submit the CTP to Caltrans and the affected local jurisdictions for review and approval at least 30 days prior to commencing construction activities. At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed and shall provide a copy of the final CTP. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached, if any.
Location	Entire project
Monitoring / Reporting Action	CPUC/BLM monitors confirm all aspects of plan are implemented.
Effectiveness Criteria	Plan is implemented
Responsible Agency	CPUC/BLM
Timing	30 days prior to construction.
MITIGATION MEASURE	**T-1b: Prepare Traffic Control Plans.** Prior to the start of construction and as part of the required traffic encroachment permits, SCE shall submit Traffic Control Plans (TCPs) to agencies with jurisdiction over the public roads that would be affected by overhead or underground construction. The measures included in the TCPs shall be consistent with the California Joint Utility Traffic Control Manual and the standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD), and the Work Area Traffic Control Handbook (WATCH). **Road Safety** TCPs shall identify: ▪ the locations of all roads or traffic lanes that would need to be temporarily closed due to construction activities, including aerial hauling by helicopter and conductor stringing activities ▪ the use of flag persons, warning signs, lights, barricades, cones, and similar means to provide safe work areas and to warn, control, protect, and expedite vehicular and pedestrian traffic ▪ use of guard poles, netting, or similar means to protect moving traffic and structures for any construction or installation work requiring the crossing of a local street, highway, or rail line ▪ the use of continuous traffic breaks operated by the California Highway Patrol on state highways. ▪ measures to avoid disruptions or delays in access for emergency service vehicles (such as immediately stopping work for emergency vehicle passage, short detours, and alternate routes developed in conjunction with local agencies). **Emergency Services** Police departments, fire departments, ambulance services, and paramedic services shall be notified at least 30 days in advance by SCE of the proposed locations, nature, timing, and duration of any construction activities affecting roads and advised of any access restrictions that could impact their effectiveness. TCPs shall also include measures ensuring work crews are ready at all times to accommodate emergency vehicles, such as having the ability to immediately stop work for emergency vehicle passage and implement short detours and alternate routes developed in conjunction with local agencies. TCPs also shall identify all emergency service agencies, include contact information for those agencies, assign responsibility for notifying service providers, and specify coordination procedures.

Table D.16-11. Mitigation Monitoring Program – Transportation & Traffic

	Copies of the TCPs shall be provided to the CPUC, BLM, Caltrans, the planning or traffic departments of the affected local jurisdictions, and all affected police departments, fire departments, and ambulance and paramedic services. Documentation of coordination with service providers shall be provided to the CPUC and BLM at least 30 days prior to the start of construction.
Location	Entire project length.
Monitoring / Reporting Action	CPUC/BLM verifies that plans are submitted and are implemented during construction as required.
Effectiveness Criteria	Traffic Control Plans meet requirements and are distributed as indicated. Plans are implemented during construction.
Responsible Agency	CPUC/BLM
Timing	At least 30 days prior to start of construction.
MITIGATION MEASURE	**T-1c: Restrict lane closures.** To minimize traffic congestion and delays during construction, SCE shall restrict all necessary lane closures or obstructions on major roadways (as designated by applicable County and City General Plans) associated with overhead construction activities to off-peak traffic periods. Unless absolutely necessary, lane closures must not occur between the peak hours of 6:00 and 9:00 a.m. and 3:30 and 6:30 p.m., or as directed in writing by the affected public agency in the encroachment permit
Location	Where construction occurs in, adjacent to, or across major roadways.
Monitoring / Reporting Action	CPUC/BLM verifies land closures are in compliance
Effectiveness Criteria	Land closures meet the mitigation measure requirements, or others as directed by agency with jurisdiction over roadway.
Responsible Agency	CPUC/BLM
Timing	During construction in or adjacent to roadways
MITIGATION MEASURE	**T-1d: Minimize disruption of bus and transit service.** SCE shall coordinate with local and regional agencies or organizations providing regular bus or transit service in the project area at least 30 days prior to construction to reduce potential interruption of these services. At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached, if any.
Location	Entire project area
Monitoring / Reporting Action	Confirm the coordination has occurred
Effectiveness Criteria	SCE coordinates with agencies and organizations as required
Responsible Agency	CPUC/BLM
Timing	Coordination to occur at least 30 days prior to construction.
MITIGATION MEASURE	**T-1e: Ensure pedestrian and bicycle circulation and safety.** Where construction will result in temporary closures of sidewalks or other pedestrian facilities, SCE shall provide temporary pedestrian access, through detours or safe areas along the construction zone. Where construction activity will result in bike route or bike path closures, appropriate detours shall be established, and detour signs shall be posted. Detours and closures required for safe pedestrian and bicycle access through or around the construction area shall be identified in a circulation plan included in the TCP's required under Mitigation Measure T-1b. All detours and related signage shall be consistent with the standard guidelines outlined in the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD).
Location	Entire project length.

Table D.16-11. Mitigation Monitoring Program – Transportation & Traffic

Monitoring / Reporting Action	CPUC/BLM verifies that TCPs include pedestrian and bicycle circulation and safety, and that measures are implemented during construction as required.
Effectiveness Criteria	Traffic Control Plans includes pedestrian and bicycle circulation safety requirements as indicated. Plans are implemented during construction.
Responsible Agency	CPUC/BLM
Timing	30 days prior to start of construction (as part of TCPs under Mitigation Measure T-1b).
MITIGATION MEASURE	**T-1f: Provide access to property.** When construction activities block access to a property and the property includes a residence or business, SCE shall work with the property owner, tenant, or business owner to provide reasonable alternate access. If construction involves trenching across or in front of the property's point of access and alternative access is not available, SCE shall lay a temporary steel plate trench bridge as needed and upon request in order to ensure access when not actively constructing at the affected location.
Location	Any location where construction would block property access.
Monitoring / Reporting Action	Mitigation measure is implemented and a means of access is provide when needed.
Effectiveness Criteria	Alternative means of access or temporary access are provided
Responsible Agency	CPUC/BLM
Timing	During construction that blocks access to a property
MITIGATION MEASURE	**T-3a: Avoid conflicts with planned transportation improvements.** Prior to final project design SCE shall review project plans with Caltrans and local traffic departments or public works departments of the counties and the individual cities through which the proposed transmission route. The review will be conducted to identify planned transportation projects potentially affected, to ensure that Project structures are placed to avoid conflict with any planned transportation projects, and to inform the jurisdictions of the timing and location of any trenching or boring that may affect road surfaces and the flow of traffic. If there are conflicts they shall be addressed through mutual agreement of SCE and the jurisdiction. At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached.
Location	Entire project length
Monitoring / Reporting Action	Coordination is confirmed.
Effectiveness Criteria	SCE coordinates with agencies having jurisdiction for transportation improvements regarding structure locations and work in or across roads
Responsible Agency	CPUC/BLM
Timing	Prior to final design

Table D.16-11. Mitigation Monitoring Program – Transportation & Traffic

MITIGATION MEASURE	**T-4a: Repair roadways damaged by construction activities.** If roadways, sidewalks, medians, curbs, shoulders, or other such features are damaged by the project's construction activities, as determined by the affected public agency, such damage shall be repaired and streets restored to their pre-project condition by SCE. Prior to construction, SCE shall confer with agencies having jurisdiction over the roads anticipated to be used by delivery vehicles and equipment. Unless an alternative method for determining roadway condition is required by a given jurisdiction, at least 30 days prior to construction, SCE shall photograph or video record all construction route public roads within 500 feet in each direction of project access points (i.e., locations where vehicles leave public roads to reach project sites) and roadways where the road surface will be damaged by project-related trenching or digging, and shall provide the respective local jurisdictions, CPUC, BLM, and Caltrans (if applicable) with a copy of these images. At least 15 days prior to construction, SCE shall provide a letter or email to CPUC and BLM confirming that the mitigation measure has been executed. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached. At the end of major construction, SCE shall coordinate with each affected jurisdiction to confirm what repairs are required. Any damage is to be repaired to the pre-construction condition within 60 days from the end of all construction, or on a schedule mutually agreed to by SCE and the jurisdiction. SCE shall provide CPUC and BLM documentation confirming the coordination and repairs have been completed.
Location	Public roads within 500 feet of project access points used by construction traffic.
Monitoring / Reporting Action	Pre-construction coordination, and submission of documentation and post-construction execution of repairs are confirmed.
Effectiveness Criteria	Pre-construction conditions are documented and post-construction repairs are made, if required.
Responsible Agency	CPUC/BLM
Timing	At least 30 days prior to construction document roadways. At least 15 days prior to construction document actions taken. Within 60 days of end of all construction, or as mutually agreed by SCE and the jurisdiction, repair damage.
MITIGATION MEASURE	**T-5a: Obtain required permits or approvals for crossing or working in railroad rights-of-way.** SCE shall obtain permits/approvals from affected railway operators (Union Pacific Railroad and Burlington Northern Santa Fey Railway) to ensure project construction activities in the rail ROW comply with each company's safety requirements and to avoid disruption to rail traffic. Copies of required permits or approvals shall be submitted to the CPUC and BLM prior to construction in or across rail ROWs.
Location	At railroad crossings
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE has obtained permits/approvals
Effectiveness Criteria	Required permits/approvals obtained to work in railroad ROW
Responsible Agency	CPUC/BLM
Timing	Prior to construction in or across rail ROWs
MITIGATION MEASURE	**T-6a: Notify public of short-term elimination of public parking spaces.** As required in Mitigation Measure LU-1a, prior to construction activity on major roadways, using media such as local newspapers and on-site postings, SCE shall notify the public of the potential for public parking spaces to be temporarily eliminated and identify where temporary parking spaces would be located. This requirement shall apply when more than five parking spaces are affected. The elimination of parking and location of alternative parking must be in conformance with the requirements of agencies responsible for parking management.
Location	Construction activity in all segments.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits Construction Notification Plan, which identifies complete notification and public inquiry process.

Table D.16-11. Mitigation Monitoring Program – Transportation & Traffic

Effectiveness Criteria	Residents, landowners and others potentially impacted are informed of construction activities and potential impacts on parking.
Responsible Agency	CPUC/BLM
Timing	Plan submitted forty-five days prior to construction; public venue notices 30 days prior to construction; public notice mailer and newspaper advertisements 15 days prior to construction.
MITIGATION MEASURE	**T-7a: Prepare and implement a final helicopter use plan.** SCE and its contractor shall prepare and obtain approval of a Final Helicopter Use Plan prior to using helicopters to transport personnel, materials, or equipment for the deconstruction of existing project facilities or construction of new or replacement project facilities. The Final Helicopter Use Plan shall draw upon protocols and methods used on previous transmission line projects and shall be submitted to CPUC and BLM for approval. The Federal Aviation Agency (FAA) has jurisdiction over U.S. airspace, aircraft, aircraft operations, airports, and pilots. To the extent that they do not conflict with any FAA requirements, the following shall apply to helicopter use and be incorporated in the Final Helicopter Use Plan. ▪ All aircraft and pilots shall be in full compliance with applicable FAA requirements and standards. ▪ On the prior day, helicopter flight information shall be provided to CPUC/BLM monitors regarding the specific sites to be used for helicopter picks and the destination of the materials or assemblages being lifted out. ▪ Daily flight notifications shall be issued by e-mail prior to commencement of any project flight activity. Information provided in the e-mail shall include pilot name, contact number, aircraft type, aircraft registration number, aircraft color, work/flight area, beginning time, estimated completion time, and scope of work. This information will be provided to CPUC/BLM monitors as well. ▪ The specific facilities, towers, poles, and spans requiring deconstruction or construction using helicopters shall be identified. ▪ Temporary staging of materials and assembly of tower sections outside of approved yards shall not occur without prior approval of CPUC or BLM, as appropriate. ▪ The yards to and from which helicopters would fly (fly yards) shall be identified and shall be of sufficient size to ensure safe operations, given the other activities occurring at the yards and the vicinity. ▪ Fly yards shall be sufficiently far from occupied residences to not create an unacceptable level of noise or dust. ▪ The means used for dust and noise control and for safe refueling shall be specified for each fly yard. ▪ Flight paths that minimize flights near schools, hospitals, nursing homes, and other sensitive group receptors shall be identified and followed. ▪ Except in an emergency, helicopters shall land or hover near the ground only in areas previously approved for landing, and all dust control and biological and cultural resource protection requirements shall apply. ▪ External loads will be secured by appropriate rigging, including boxing, netting, choking, and cabling, or other suitable means. Only qualified riggers shall prepare and attach external loads to helicopters, and rigging shall be appropriate to the nature of the load, including the use of devices as necessary to prevent materials being lost in flight. Where appropriate to reduce load in-flight spinning and movement, drag chutes will be attached to loads. The need for drag chutes will be determined by the pilot and rigging personnel, where appropriate. At locations where rigging is to occur, a sufficient supply of appropriate rigging and containment materials in good repair shall be on hand at all times. ▪ All aircraft are to be configured with weight sensors such that, when preparing to haul external loads, the pilot is able to determine the weight of the load being lifted ▪ Yards or landing zones shall have a designated qualified individual managing the movement of aircraft in and out of the yard or landing zone when flight activity is high.

Table D.16-11. Mitigation Monitoring Program – Transportation & Traffic

	▪ Appropriate protocols for communication among pilots and between pilots and the ground shall be developed and implemented. ▪ A GPS-based data system shall be installed in each aircraft – The system shall identify for the pilot all project-approved project flight paths and those areas where overflights are restricted (such as seasonally restricted bird nesting areas and sensitive residential or institutional areas), and shall be updated as often as any flight restrictions are implemented or lifted. – The system shall automatically record and preserve flight data sufficient to identify the aircraft's flight path, including altitude above ground. The system shall be capable of providing the information required with regard to flight path and aircraft identifier, and provide a location "ping" no less frequently the once every 3 seconds. These data shall be collected daily and maintained by SCE or its contractor for a period of no less than six months and made available to CPUC or BLM upon request. The Helicopter Use Plan shall be submitted to CPUC and BLM for review and approval at least 60 days prior to the use of helicopters on the project. Once the Helicopter Use Plan is made final, a copy shall be provided as a courtesy to each jurisdiction through which the Project passes.
Location	Project wide
Monitoring / Reporting Action	CPUC/BLM reviews and approves plan. Monitors confirm that all requirements of mitigation measure are implemented
Effectiveness Criteria	Plan is fully implemented
Responsible Agency	CPUC/BLM
Timing	During all operations involving helicopters
MITIGATION MEASURE	**T-8a: Obtain FAA review and approval of all structures and spans posing potential aircraft safety hazards.** SCE shall submit required forms and information to FAA for its review and approval of transmission structures and conductor spans that may require installation of safety devices or other restrictions. Copies of FAA's review and approval shall be provided to CPUC and BLM at least 60 days prior to erection of structures or installation of conductors that would be in violation of FAA standards and requirements. These structures and spans shall be identified to CPUC and BLM, and the planned installation of required lighting and marker balls described.
Location	Entire project.
Monitoring / Reporting Action	CPUC/BLM monitors receive evidence of FAA review and approval
Effectiveness Criteria	FAA has concurred in towers and spans requiring safety devices
Responsible Agency	CPUC/BLM
Timing	60 days prior to erecting structures or installing conductors that would violate FAA standards and requirements.

D.16.7 References

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Attachment D.16-1: SCE Preliminary Helicopter Use Plan

West of Devers Upgrade Project Preliminary Helicopter Use Plan

December 18, 2013

The following preliminary plan describes how helicopter operations are anticipated to be conducted on the WOD Upgrade Project. Other commitments and responsibilities of SCE and its contractors may apply in addition to those identified here.

Federal Aviation Administration (FAA)

- At a minimum, helicopter operations will comply with applicable FAA regulations and requirements. This includes pilot qualifications, aircraft airworthiness, and use of FAA-approved practices and equipment, where applicable.

General Helicopter Usage

- Project-related helicopter activities for the construction of the transmission lines could include delivery of equipment and materials from construction staging yards to structure sites, hardware installation, and conductor and/or optical ground wire (OPGW) stringing operations.
- Helicopter models assumed to be used would include the Bell 500 (MD 500) and Kaman Kmax (or equivalent light and medium duty helicopters).
- Project-related helicopter activities during construction of the transmission lines could occur across the entire project area.
- Helicopters may land in any approved disturbance area, including tower sites, pull sites, and access or spur roads.
- Prior to commencement of construction, SCE and its contractor will develop detailed flight routes to minimize flight into sensitive areas and to avoid aircraft congestion.

Helicopter-based Tower Construction

- Helicopter-based tower construction is not anticipated. However, in the event that helicopter-based tower construction is deemed necessary, the following would apply:
  - Towers sections would be assembled at the construction staging yards and hauled by helicopter to the designated tower sites and lowered into place.
  - Tower site and foundation preparation equipment and materials would be ferried to the site by helicopter or delivered by road.
  - SCE may temporarily stage materials and/or assemble tower sections at previously approved tower and wire pull sites that are road-accessible. These activities will be specific to construction planned to occur at helicopter-constructed tower sites.
  - SCE will provide CPUC monitors a list of the areas to be used for this temporary purpose, and will identify the material or assemblages to be staged at each site and the tower sites where the materials or assemblages are to be used.
- A helicopter will transport staged materials or tower sections from the approved sites to their destinations. When materials or assemblages are to be delivered to and retrieved by helicopter from temporary staging sites described above, the following procedures will be followed:
  - Prior notice will be given in the daily helicopter flight information provided to agency monitors regarding the specific sites that will be used for helicopter picks that day and the destination of the materials or assemblages being lifted out.
  - Dust control measures will be implemented to assure that fugitive dust is not generated during picking operations. Also, all other applicable mitigation measures and requirements (e.g., clearance surveys and sweeps, notices to sensitive receptors, etc.) will be implemented prior to and during the helicopter pick activity.

Rigging and Hauling

- External loads will be secured by rigging, including boxing, netting, choking, and cabling, or other appropriate means. Where appropriate to reduce load in-flight spinning and movement, drag chutes will be attached to loads. The use of drag chutes will be determined by the pilot and rigging personnel, where appropriate.
- All helicopter landing areas, and tower site locations at which external load rigging occurs will have ample load containment materials (e.g., covered boxes, netting, drag chutes) to ensure that the appropriate containment practices can be implemented at all times.

Flight Management

- Fly Yard Coordinators (FYCs) will be responsible for coordinating all helicopter activities at yards.
- All pilots entering an area of operations will communicate with both the FYC and other pilots to establish the location of other helicopter traffic, establish traffic patterns, and yard and worksite conditions.
- SCE and its contractor will use Garmin GPS units in helicopters to track and record flights. Helicopters may have/use other tracking systems (other than Garmin), however, the system use will be capable of providing the

information required with regard to flight path and aircraft, and will provide a 'ping' no less frequently the once every 3 seconds.

- GPS data showing buffers, corridors, and other pertinent restrictions will be distributed to SCE and contractor helicopter operations to keep pilots informed of flight restrictions.
- GPS data will be updated daily or as often as new restrictions are implemented or lifted.
- Daily flight notifications are issued prior to commencement of any project flight activity via email. Information provided in the e-mail includes pilot name, contact number, aircraft type, aircraft registration number, aircraft color, work/flight area, beginning time, estimated completion time and scope of work. This information will be provided to the CPUC and its designate representative as well.

Data Management

- Designated CPUC representatives will receive the project's GPS emails updating project external load flight corridors, nesting bird buffers, and other sensitive areas to be avoided.
- Onboard GPS flight tracking data for both SCE and contractor aircraft will be downloaded and e-mailed daily to a designated person at SCE for any project helicopter that has flown that day. SCE will store this data for a minimum of 30 days.
- Upon request, SCE will provide the CPUC or its representative full access to flight track data for the purpose of conducting reviews. Agency representatives will be included on GPS emails and daily helicopter schedules.
  - Flight track data requested by CPUC will be made available within 2-3 business days of the request being submitted.
  - Responses to flight track requests should be prepared and presented as an electronic screenshot for the requested area(s) using a Google Earth or similar base map. Flight tracks should also be available for CPUC review on a Garmin Basecamp map for a secondary point of reference for ensuring accuracy.
  - Flight track screenshots should be legible and show all helicopter flight data, designated external load flight corridor, and all current nesting bird and any other sensitive area buffers within each requested area.

Other Conditions

- To address load limitations imposed by air temperature and elevation, pilots will exercise due diligence in performing the necessary calculations using the Flight Manual and available meteorological and load data. The pilot will conduct a pre-shift (i.e., before the pilot and aircraft are going on duty) "Load Calculation" based upon the given and anticipated weather conditions and, in particular, the temperatures and the operating altitudes to be encountered. The resulting load calculation values will be communicated to Rigging Specialists working with each aircraft.
- All aircraft are to be configured with weight sensors such that, when preparing to haul external loads, the pilot is able to determine the weight of the load being lifted.
- During stringing operations, no sock line or conductor would be located outside of approved and secured work areas unless previously identified to ensure public safety.
- During external load hauling, traffic controls will be in place on roads and heavily used trails crossed by the flight.

D.17 Utilities and Public Services

This section describes the affected environment for Utilities and Public Services in Section D.17.1 and presents the relevant regulations and standards in Section D.17.2. Sections D.17.3 through D.17.5 describe the impacts of the Proposed Project and the alternatives. Section D.17.6 presents the mitigation measures and mitigation monitoring requirements, and D.17.7 lists references cited.

This section analyzes whether the project would result in impacts due to the need for new or additional public services including police, fire services, schools, and hospitals. It also addresses whether there are sufficient utilities and utility providers to respond to any additional requirements caused by the project. If additional utilities would be required, any environmental impacts associated with these are discussed.

D.17.1 Environmental Setting / Affected Environment

D.17.1.1 Regional Setting and Approach to Data Collection

As described in Section B.2, Description of Proposed Project Components, the study area for the project includes the cities and counties located along the ROW, including San Bernardino and Riverside Counties. Incorporated cities within the study area include Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Palm Springs, Rancho Cucamonga, Redlands, and San Bernardino. In addition to incorporated and unincorporated county and city land, the ROW also traverses Bureau of Land Management (BLM) land and Morongo reservation lands. Regional and local public services and utilities information is presented in Section D.17.1.2. Current public services and utility information was provided in the PEA (SCE, 2013) and collected from planning documents or other published information from the jurisdictions in the study area.

For Utilities and Public Services, the study area includes the area within 0.25 miles of the centerline of the Proposed Project. This was used to identify jurisdictions likely to serve the project. In some instances, utility and service providers beyond the 0.25-mile buffer are included where needed to identify the applicable jurisdiction serving the project.

The Proposed Project component in the City of Rancho Cucamonga is limited to improvements within the Mechanical Electrical Equipment Room (MEER) at Etiwanda Substation. The extent of this work within an existing facility would not have the potential to affect public services in the City of Rancho Cucamonga; therefore, the City of Rancho Cucamonga is not included for further discussion.

D.17.1.2 Environmental Setting by Segment

On any given day the Proposed Project would require up to 300 construction personnel for the transmission and subtransmission line, between 15 and 20 construction personnel at each substation, and approximately 20 construction personnel for the distribution lines. Construction would be performed by either SCE construction crews or contractors. If SCE construction crews are used, they typically would be based at SCE's local facilities, (e.g., service centers, substations, power plants, and transmission ROW) or at temporary material staging yards set up for the project. Contractor construction personnel would be based out of the contractor's existing yard or temporary material staging yards set up for the project. SCE anticipates that crews would work concurrently whenever possible. The estimated workforce, as well as materials and equipment required for construction of the Proposed Project, are detailed for each project component in Appendix 1C.

D.17.1.2.1 Segment 1: San Bernardino

The San Bernardino Junction to San Bernardino Substation segment extends approximately 3 miles across the cities of Loma Linda and Redlands and unincorporated areas of San Bernardino County. The City of San Bernardino is within the project study area and provides mutual aid for some services to the surrounding cities but is not physically crossed by Segment 1.

Police

The San Bernardino Sheriff-Coroner's Department provides police and law enforcement services in unincorporated areas of San Bernardino County. Unincorporated areas in Segment 1 are served out of the Central Station located at 655 East Third Street in San Bernardino.

The City of Loma Linda contracts with the San Bernardino County Sheriff-Coroner's Department for police services. The Department provides 11 sworn deputies and a sheriff workstation at City Hall. The Department divides the City into 16 reporting districts and has an average emergency response time within the City of 3.25 minutes (SCE, 2013).

The City of Redlands Police Department operates administrative offices at 30 Cajon Street and its main police station and dispatch center at 212 Brookside Avenue.

The City of San Bernardino Police Department employs 312 sworn officers and 150 civilian support staff in its Patrol Division, Investigations Division, and Administrative Services Division. The City Police Department operates under a mutual aid agreement with police agencies in the surrounding cities. This allows use of up to 50 percent of adjacent agency resources upon request and for automatic response within zones of mutual aid. The unincorporated areas within the overall city boundary are provided police services from the San Bernardino County Sheriff-Coroner's Department. The California Highway Patrol in San Bernardino provides traffic patrol on State Highways and also on roads within the unincorporated areas of the County. The California Highway Patrol also provides emergency response backup to city police and the County Sheriff-Coroner upon request (SCE, 2013).

Fire Services

There are no fire stations within the study area for Segment 1. San Bernardino County provides fire protection services to more than 60 communities and cities and all unincorporated areas of the County. The County Fire Department is divided into 5 divisions. The Proposed Project in San Bernardino County would be located in Division 1 (Valley). Additionally, the California Department of Forestry and Fire Protection (CALFIRE) Inyo-Mono-San Bernardino Unit serves San Bernardino County.

The City of Loma Linda Fire Department consists of 1 chief officer, 6 captains, 6 engineers, 6 firefighter/paramedics, and 6 firefighters. The fire station (Station 215) is located at 11325 Loma Linda Drive in the City of Loma Linda. Response time varies within the City due to the daily influx of traffic to and from the University and the related medical center. The City of Loma Linda maintains a joint response/automatic aid agreement with fire departments in neighboring cities, including Colton, Redlands, and San Bernardino. The Department also participates in the California Master Mutual Aid Agreement (SCE, 2013).

The City of Redlands operates 4 fire stations with 60 uniformed personnel, 19 on-duty personnel, 5 department chiefs, 47 emergency medical technicians (EMTs), 18 firefighter/paramedics, 1 fire marshal, and 3 non-uniformed (civilian) personnel.

The City of San Bernardino Fire Department serves a resident population of approximately 202,000 and covers a service area of 59.3 miles. The fire administration consists of a 10-member staff. The total number of emergency operations personnel is 161 divided among 3 platoons. The current "On-Duty" strength per shift (total number of personnel available to respond to emergencies including 2 battalion Chief Officers) is 53 divided among the fourteen companies.

Schools

The County of San Bernardino does not provide public elementary, middle school, or high school facilities; these are the responsibility of local school districts. However, the County Superintendent acts as an intermediate service agency between the California Department of Education and the 33 school districts in San Bernardino County to help meet the educational needs of all children countywide.

Public education in the City of Loma Linda is provided by Redlands Unified School District, except for the western portion of the City, which is served by Colton Joint Unified School District. Loma Linda Academy, a private Seventh-day Adventist school, also provides schooling for grades K through 12. There are no schools within the study area in Loma Linda (SCE, 2013).

Redlands Unified School District encompasses 147 square miles and serves the cities of Redlands and Loma Linda, the unincorporated communities of Mentone and Forest Falls, and portions of the cities of San Bernardino and Highland. There are two schools in the City of Redlands within the project study area: Montessori School of Redlands and Grove Charter High School. In addition to this school district, Barbara Phelps Community Day School, overseen by the San Bernardino County Superintendent of Schools Office, is located in the City of Redlands and is within the project study area (SCE, 2013).

Educational services within the majority of the City of San Bernardino are provided by the San Bernardino City Unified School District. San Bernardino Valley College (SBVC) and California State University, San Bernardino (CSUSB) provide higher education for residents. None of the schools within the City of San Bernardino are within the project study area (SCE, 2013).

Hospitals

The County Department of Public Health does not operate hospitals, but does have seven public health offices, two of which are located in the cities of Redlands and San Bernardino.

Loma Linda University Medical Center annually provides whole-person care for more than 33,000 inpatients and 500,000 outpatients. It is the only Level 1 regional trauma center for Inyo, Mono, Riverside, and San Bernardino Counties. The main medical center is located at 11234 Anderson Street in the City of Loma Linda.

Redlands Community Hospital is a 229-bed acute care facility and provides inpatient and outpatient services. Approximately 25,000 patients are seen per year, with the primary diagnoses being, but not limited to, cardiac, respiratory, pediatric, psychiatric, and obstetrical emergencies.

Hospitals serving the City of San Bernardino include Community Hospital of San Bernardino, Loma Linda University Medical Center, Redlands Community Hospital, and St. Bernardine Medical Center. The Community Hospital of San Bernardino is a non-profit 343-bed full-service hospital offering acute inpatient and outpatient care, obstetrics and pediatrics, home health, behavioral health services, and emergency and neurological care for children and adults. St. Bernardine Medical Center is a 463-bed, not-for-profit healthcare facility. St. Bernardine Medical Center is among the largest hospitals in the Inland Empire, offering a full continuum of services, including, but not limited to, 24-hour emergency services, family care, wound center, and advanced heart surgery.

Table D.17-1 provides a list of public service and utility providers by jurisdiction.

Table D.17-1. Public Service and Utility Providers by Jurisdiction – Segment 1

San Bernardino County	
Natural gas & electricity – SCE, Southern California Gas Water – San Bernardino Valley Municipal Water Department Wastewater – County of San Bernardino Environmental Health Services. Unincorporated areas require septic systems because no sewer services are provided.	Solid Waste (Landfills) – California Street Landfill in Redlands and San Timoteo Landfill in Redlands Fire protection – San Bernardino County Fire Department Police protection – San Bernardino County Sheriff's-Coroners Department Schools within 0.25 miles of Proposed Project – None
City of Loma Linda (San Bernardino County)	
Natural gas & electricity – SCE, Southern California Gas Water – City of Loma Linda Department of Public Works, Water Division Wastewater – City of Loma Linda Department of Public Works, Utilities Division	Solid Waste (Landfills) – San Timoteo Landfill Fire protection – City of Loma Linda Fire Department Police protection – San Bernardino County Sheriff's Department Schools within 0.25 miles of Proposed Project – None
City of Redlands (San Bernardino County)	
Natural gas & electricity – SCE, Southern California Gas Water – Redlands Municipal Utilities & Engineering Department Wastewater – Redlands Municipal Utilities & Engineering Department	Solid Waste (Landfills) – California Street Landfill Fire protection – City of Redlands Fire Department Police protection – City of Redlands Police Department Schools within 0.25 miles of Proposed Project – Montessori School, Grove Charter High School, Barbara Phelps Community Day School
City of San Bernardino (San Bernardino County)	
Natural gas & electricity – SCE, Southern California Gas Water – City of San Bernardino Municipal Water Department Wastewater – City of San Bernardino Municipal Water Department	Solid Waste (Landfills) – City of San Bernardino Department of Public Works Integrated Waste Management Division Fire protection – City of San Bernardino Fire Department Police protection – City of San Bernardino Police Department Schools within One Mile of Proposed Project – None

Source: SCE, 2013.

Water

Water supply in the project study area is provided by various sources including municipal water departments, local water districts and water agencies, and private water companies. The majority of the available water supply is from various groundwater basins as well as imported water from northern California and the Colorado River.

San Bernardino County's water sources are 85 percent local and 15 percent imported purchased water. Imported water comes primarily from the Metropolitan Water District and the State Water Project (SWP). The California Department of Water Resources (DWR) is charged with the management of water resources within the State. The DWR cooperates with other agencies to benefit the State and to protect, restore, and enhance natural and human environments. Regionally, more than 300 public agencies and private companies provide water on a retail basis to approximately 17 million people living in a 5,200-square-mile, 6-county area.

The Metropolitan Water District (MWD) of Southern California is the primary wholesale provider of imported water for the region, serving 26 member agencies, which in turn serve customers in more than 145 cities and 94 unincorporated communities. The MWD is the primary water provider for the majority of the areas that would be developed within San Bernardino County.

The San Bernardino Valley Municipal Water District (SBVMWD) sources are divided among imported, surface, and reclaimed water supplies. Groundwater is the principal source of supply in the SBVMWD service area, accounting for 58 percent of the total water demand. Surface water is the second largest supply source to the SBVMWD, accounting for approximately 23 percent of the total demand (SCE, 2013)

The City of Loma Linda Department of Public Works, Water Division, provides the production and distribution of water within the City. The City's water service area consists of approximately 10.6 square miles, which includes the City and Sphere of Influence (SOI) areas. At this time, the City obtains all of its water from groundwater wells in the Bunker Hill Basin, an aquifer underlying the eastern San Bernardino Valley. Groundwater in the Bunker Hill Basin is replenished from rainfall and snowmelt from the San Bernardino Mountains. In addition to the groundwater wells, the City has two emergency connections with the City of San Bernardino.

The City of Redlands provides domestic water supplies to the city, the unincorporated community of Mentone, and surrounding areas through a combination of local groundwater, local surface water, and imported water from the State Water Project.

The San Bernardino Municipal Water Department (SBMWD) provides domestic water for the City of San Bernardino and unincorporated areas of San Bernardino County as well as back-up to the City of Loma Linda. Groundwater from the Bunker Hill Basin is the primary source of water supply for the SBMWD. The SBMWD has the capacity to provide 70,000 acre-feet per year of water from groundwater and surface water sources. Other sources of water supply include the SWP, the Santa Ana River, Mill Creek, and Lytle Creek.

The Proposed Project would parallel, cross, or would be adjacent to the following existing utilities and facilities in Segment 1 (SCE, 2014; Data Response PU-1):

- 66 kV lines relocated to accommodate the Proposed Project
- Dental and Intern 12 kV distribution circuits in the City of Loma Linda, both relocated to accommodate the Proposed Project
- City of Loma Linda sewer line
- City of Loma Linda water line
- Kinder Morgan natural gas pipeline
- Level 3 fiber optic cable
- MCI/Verizon fiber optic cable
- Southern California 12-inch gas pipeline
- Verizon fiber optic cable
- SCE brine line
- City of Loma Linda storm drain

D.17.1.2.2 Segment 2: Colton and Loma Linda

Segment 2 extends from Vista Substation (MP 0) to San Bernardino Junction (MP 5.2). It would leave Vista Substation and cross I-215 heading east for approximately 5 miles through the cities of Colton and Grand Terrace to San Bernardino Junction just outside of the City of Loma Linda. Jurisdictions within this segment include unincorporated San Bernardino County and the Cities of Colton, Grand Terrace, and Loma Linda. The public services and utilities in San Bernardino County and the City of Loma Linda are described in Section D.17.1.2.1, Segment 1: San Bernardino, and are not repeated here.

Police

The City of Colton Police Department currently has one police station and dispatch center located at 650 North La Cadena Drive. The Department operates with 46 sworn officers and 22 civilian personnel.

The City of Grand Terrace contracts with the San Bernardino County Sheriff-Coroner's Department. Currently, 8 sworn deputies provide police services for the City of Grand Terrace. A Citizen Patrol team of volunteers also operates through the Sheriff-Coroner's Department (18 volunteer members).

Fire Services

The Colton Fire Department is a full-service fire department with a total of 32 uniformed personnel. Nine firefighters and 1 battalion chief staff 3 of the City's 4 fire stations daily and respond to over 5,000 calls a year (SCE, 2013). The Colton Fire Department has also signed and participates in the "California Master Mutual Aid Agreement of 1950." This agreement provides assistance from other fire departments, without charge, during major emergencies, to cities temporarily overwhelmed by an incident. During major wildland fires, earthquakes, floods, or a variety of other incidents, cities would pool their resources and send them to a city in need. The City also has entered into various "Automatic Aid" agreements with neighboring cities. Automatic Aid agreements such as these guarantee the quickest and most efficient fire response regardless of city boundaries.

The City of Grand Terrace contracts with San Bernardino County Fire Department for fire and rescue services.

Schools

The City of Colton Joint Unified School District operates 19 elementary schools, 4 middle schools, and 5 high schools within the cities of Colton, Fontana, Grand Terrace, and the unincorporated community of Bloomington. The District serves 23,608 students in grades K through 12. Two schools in the City of Colton are within the project study area, the Reche Canyon Elementary School and the Christian Center Academy Elementary/High School.

The City of Grand Terrace is part of the Colton Joint Unified School District. Within the City of Grand Terrace, the CJUSD has 2 elementary schools and 1 middle school. The Terrace View Elementary School is within the project study area.

Hospitals

Arrowhead Regional Medical Center (ARMC) is a state-of-the-art hospital providing comprehensive health care services for children and adults of all ages. ARMC is host to a 24-hour Emergency Department, Level II Trauma Center, three Family Health Centers, and the only burn center serving San Bernardino, Riverside, Inyo, and Mono Counties. The 456-bed facility, which is owned and operated by the County of San Bernardino, is located off Interstate 10 in Colton. ARMC offers a full range of patient services and includes 6 medical/surgical units, advanced critical care, neonatal intensive care, and emergency and trauma care.

The City of Grand Terrace's nearest hospital and medical center is the ARMC.

Table D.17-2 provides a list of public service and utility providers by jurisdiction.

Table D.17-2. Public Service and Utility Providers by Jurisdiction – Segment 2

City of Colton (San Bernardino County)	
Natural gas & electricity – SCE, Southern California Gas Water – City of Colton Public Utilities Department Wastewater – City of Colton Wastewater Treatment Plant Solid Waste (Landfills) – Republic Services	Fire protection – City of Colton Fire Department Police protection – City of Colton Police Department Schools within 0.25 miles of Proposed Project – Reche Canyon Elementary School and Christian Center Academy Elementary/High School
City of Grand Terrace (San Bernardino County)	
Natural gas & electricity – SCE, Southern California Gas Water – Riverside Highland Water Company Wastewater – City of Colton Wastewater Treatment Plant Solid Waste (Landfills) – Burrtec Waste Industries, Inc.	Fire protection – San Bernardino County Fire Department Police protection – San Bernardino County Sheriff-Coroner's Department Schools within 0.25 miles of Proposed Project – Terrace View Elementary School

Source: SCE, 2013.

Water

The City of Colton Public Utilities Department provides water service to the city. The city is situated on a large potable aquifer in the State of California and all of the City's water comes from deep water wells. Colton's existing potable water system facilities consist of 15 wells, 5 main booster pumping plants, 9 water storage reservoirs, 2 pressure reducing facilities, and over 120 miles of water transmission and distribution pipelines

Water service for the City of Grand Terrace is provided by the Riverside Highland Water Company. The company is a private water company owned by its shareholders. The company utilizes wells to provide water service to the City. The company maintains water main transmission lines, wells, reservoirs, and service laterals throughout the City and is directly responsible for their ongoing maintenance.

The Proposed Project would parallel, cross, or would be adjacent to the following existing utilities and facilities in Segment 2 (SCE, 2014; Data Response PU-1):

- City of Grand Terrace sewer line
- City of Riverside abandoned water pipeline
- DWR water line
- Level 3 Fiber Optic line
- Riverside Highland Water Company water line
- Southern California gas pipelines
- Irrigation line for unknown agency

D.17.1.2.3 Segment 3: San Timoteo Canyon

Segment 3 would be approximately 10 miles in length and extends east from the San Bernardino Junction (MP 5.2) to El Casco Substation (MP 15.2). Jurisdictions within this segment include unincorporated San Bernardino and Riverside Counties and the City of Redlands. The public services and utilities in unincorporated San Bernardino County and the City of Redlands are described in Section D.17.1.2.1, Segment 1: San Bernardino, and are not repeated here.

Police

Riverside County Sheriff's Department provides much of the region's law enforcement via 10 sheriff stations spread across the region. Stations include Jurupa Valley, Perris, Lake Elsinore, Moreno Valley, Southwest, Hemet, Cabazon, Palm Desert, Indio, and Colorado River. Each of the 10 stations employs patrol duty officers to serve the unincorporated areas of Riverside County as well as provide contract law enforcement to tribes and cities.

Fire Services

The Riverside County Fire Department maintains a contractual relationship with CALFIRE to provide fire protection services and emergency response services to the unincorporated areas of the County. The Riverside County Fire Department Administrative Headquarters is located at 210 West San Jacinto Avenue in the City of Perris. The 96 fire stations have a mix of State, County, contract city, and volunteer-staffed equipment. All are dispatched by the CALFIRE Riverside Unit/Riverside County Fire Department Emergency Command Center and are part of the Integrated Fire Protection System under contract with the State. In accordance with Riverside County Ordinance 533.4, the Office of Emergency Services maintains 2 fully functional Emergency Operations Centers (EOCs). The EOCs are the center of countywide coordination for the response and recovery for extraordinary emergencies and disasters affecting Riverside County.

Schools

There are 23 school districts in Riverside County. There are no schools within the project study area in Segment 3 (SCE, 2013).

Hospitals

The County of Riverside operates 1 hospital and 9 clinics that provide same-day care. The County operates a hospital facility in Moreno Valley, the Riverside County Regional Medical Center. The hospital is licensed for 364 beds within the 520,000-square foot facility. It is estimated that the facility can provide 200,000 annual patient visits in specialty outpatient clinics, an increase of 80,000 from the previously existing facility in Riverside.

In addition to the hospital in Moreno Valley, Riverside County operates nine separate clinics that are located throughout the County. A tenth clinic is located within the County hospital. The clinics are open to anyone.

Table D.17-3 provides a list of public service and utility providers by jurisdiction.

Table D.17-3. Public Service and Utility Providers by Jurisdiction – Segment 3

San Bernardino County	
Natural gas & electricity – SCE, Southern California Gas Water – MWD of Southern California Wastewater – Coachella Valley Water District, Mission Springs Water District, Desert Valley Agency	Solid Waste (Landfills) – California Street Landfill in Redlands and San Timoteo Landfill in Redlands Fire protection – Riverside County Fire Department Police protection – Riverside County Sheriff's Department Schools within 0.25 miles of Proposed Project – None

Source: SCE, 2013.

Water

Eastern Riverside County relies heavily on water imported from Northern California, the Colorado River, and local groundwater. Most of these sources are at capacity. The supply of water for Riverside County is limited by its arid climate, past and current agricultural practices, its projected population growth and the demand associated with such growth, and the dependence on imported water. Recent apportionments from Northern California have been reduced as part of the CALFED Bay-Delta Program, and water deliveries from the Colorado River have been reduced.

Most groundwater basins within Riverside County store local and imported water for later use to meet seasonal and drought year demands. With these conjunctive-use groundwater programs, groundwater is artificially replenished in wet years with surplus imported water. Water is then extracted during drought years or during emergency situations. Conjunctive use, also known as aquifer storage and recovery, which may also involve the recharge of reclaimed water, enhances the region's ability to meet water demand during years of short supply and increases overall local supply reliability.

Segment 3 water provider in unincorporated Riverside County is MWD, described in Section D.17.1.2.1, Segment 1: San Bernardino.

The Proposed Project would parallel, cross, or would be adjacent to the following existing utilities and facilities in Segment 3 (SCE, 2014; Data Response PU-1):

- AT&T fiber optic cable
- Kinder Morgan gas pipeline
- Level 3 fiber optic cable
- SCE underground electric line

D.17.1.2.4 Segment 4: Beaumont and Banning

Segment 4 would be approximately 12 miles in length and extends east from the El Casco Substation (MP 15.2) to San Gorgonio Avenue in the City of Banning (MP 27.4). Jurisdictions within this segment include unincorporated Riverside County and the Cities of Calimesa, Beaumont, and Banning. Unincorporated Riverside County is described in Section D.17.1.2.3, Segment 3: San Timoteo Canyon. Any new information for the County is provided below.

Police

The City of Banning Police Department provides police services within the city limits and has a total of 36 sworn positions and 12 classified personnel. The Banning Police Department Patrol Division is organized into 2 shifts per day, based on a 12-hour plan. The patrol teams are the first responders for all calls within the City of Banning and its Sphere of Influence (SOI). The City participates in mutual aid agreements with other Riverside County law enforcement agencies.

The City of Beaumont Police Department provides comprehensive law enforcement services for the City. The department is staffed with approximately 51 sworn officers and 24 non-sworn personnel and has a response time target of 3 minutes.

The City of Calimesa's police services are provided through the County of Riverside Sheriff's Department through a contractual agreement. Sheriff's services are located at the Cabazon Station (50290 Main Street, Cabazon, 92230), east of the City of Banning. Deputies are on duty and patrol the City on a 24-hour basis.

Fire Services

Fire protection services are provided to the City of Banning through a contractual agreement with the Riverside County Fire Department, which contracts with CALFIRE. Through a mutual aid agreement with surrounding communities, including Beaumont, Calimesa, and Cabazon, each city has access to and benefits from the services provided by fire stations in other cities. The Riverside County Fire Department's Regional Fire Protection Program allows its fire stations to actively support one another regardless of geographic or jurisdictional boundaries. On receipt of an emergency call, the station physically closest to the emergency would respond, allowing neighboring communities to share the use of specialized equipment and staff. There is 1 fire station located in the City of Banning and a station in the city of Beaumont also responds to fire emergencies that occur in the City of Banning.

The City of Beaumont contracts with the Riverside County Fire Department for citywide services, including fire protection, public services, and emergency medical aid response. Five existing fire stations serve the city.

The City of Calimesa has been contracting with the Riverside County Fire Department for fire and emergency services since 1990. One fire station serves the city.

Schools

The City of Banning is served by 2 school districts, the Banning Unified School District and the Beaumont Unified School District. The Banning Unified School District boundaries encompass the majority of the City and it enrolls approximately 5,000 students. Approximately 200 students live within the Beaumont Unified School District boundaries. The Mountain View Middle School. San Gorgonio Middle School, Hoffer Elementary School, and Susan B. Coombs Middle School are within the project study area.

The Beaumont Unified School District provides educational services within the City of Beaumont. The District currently serves students in the City of Beaumont, a portion of Banning, Calimesa, and the unincorporated community of Cherry Valley. The Beaumont Unified School District includes 13 schools that serve 8,306 students in grades K through 12. Schools within the project study area are the Three Rings Ranch Elementary School, Wellwood Elementary School, and Beaumont High School.

The City of Calimesa is within 2 school districts; the Yucaipa-Calimesa Joint Unified School District serves the western portion of the City, while the southeastern end of the City is served by the Beaumont Unified School District. There is currently only one public school in Calimesa, the Mesa View Middle School which is not within the project study area. Calimesa's only currently operating elementary and high school is the Mesa Grande Academy, a private K through 12 school owned by the Seventh-day Adventist Church. It is not within the project study area.

Hospitals

San Gorgonio Memorial Hospital is located at 600 North Highland Springs Avenue in the City of Banning. The 85,000-square foot hospital, which opened in 1951, is licensed for 70 beds. The hospital opened as a State district hospital and is one of four nonprofit hospitals in Riverside County. It provides general medical-surgical care, intensive care, emergency care, obstetrics, inpatient and outpatient surgery, and a range of ambulatory services, including physical therapy and cardiac rehabilitation. Staffing includes board-certified emergency physicians available 24 hours a day.

The Highland Springs Medical Plaza is located in Beaumont. This 90,000-square foot facility is a collaboration between Loma Linda University Medical Center, Redlands Community Hospital, and Beaver Medical Group and enhances access to medical services for families in the Inland Empire and surrounding areas. The Highland Springs Medical Plaza does not provide emergency hospital services, but does include an urgent care center.

The City of Calimesa does not currently have any medical centers or hospitals. The nearest hospitals serving the citizens of Calimesa are San Gorgonio Memorial Hospital in Banning, Kaiser Foundation Hospital in Moreno Valley, and Riverside County Regional Medical Center in Moreno Valley.

Table D.17-4 provides a list of public service and utility providers by jurisdiction.

Table D.17-4. Utility and Service Providers by Jurisdiction – Beaumont and Banning Segment

City of Banning (Riverside County)	
Natural gas & electricity – SCE, Southern California Gas Water – City of Banning Public Works Department Wastewater – City of Banning Public Works Department Solid Waste (Landfills) – Waste Management	Fire protection – Riverside County Fire Department Police protection – City of Banning Police Department Schools within 0.25 miles of Proposed Project – Mountain View Middle School, San Gorgonio Middle School, Hoffer Elementary School, Susan B. Coombs Middle School
City of Beaumont (Riverside County)	
Natural gas & electricity – SCE, Southern California Gas Water – Beaumont–Cherry Valley Water District Wastewater – City of Beaumont Wastewater Treatment Plant Solid Waste (Landfills) – Lamb Canyon Landfill	Fire protection – Riverside County Fire Department Police protection – City of Beaumont Police Department Schools within 0.25 miles of Proposed Project – Three Rings Ranch Elementary School, Wellwood Elementary School, and Beaumont High School
City of Calimesa (Riverside County)	
Natural gas & electricity – SCE, Southern California Gas Water – South Mesa Water Company Wastewater – Yucaipa Valley Water District Solid Waste (Landfills) – CR&R Waste & Recycling Services	Fire protection – Riverside County Fire Department Police protection – County of Riverside Sheriff's Department Schools within 0.25 miles of Proposed Project – None

Source: SCE, 2013.

Water

In the Segment 4 area of Riverside County, the San Gorgonio Pass Water Agency (SGPWA) provides water to approximately 228 square miles (mostly within Riverside County, with 2 small areas in San Bernardino County) and extends from Calimesa to Cabazon. The service area includes the cities of Calimesa, Beaumont, and Banning, and the communities of Cherry Valley, Cabazon, and the Banning Bench. In 2010, SGPWA provided water to approximately 92,000 residents. The SGPWA imports water from the SWP and sells this water to local water retailers.

The City of Banning Public Works and Utilities Department provides domestic water services to the City of Banning. The City also provides domestic water services to unincorporated Riverside County lands located southwesterly of the City limits. The City owns and operates wells, reservoirs, and a distribution line system to deliver domestic water within its service area.

Water service in the Beaumont area is provided by the Beaumont–Cherry Valley Water District. The service area includes the City of Beaumont and the majority of unincorporated Cherry Valley. Currently, all domestic water supplies come from local groundwater sources, and no water is currently being imported.

The City of Calimesa receives its water from the South Mesa Water Company (SMWC). SMWC is a mutual water company regulated by the State of California Corporation Commission and governed by a five-member elected Board of Directors. Records indicate the Company was first organized as an irrigation company. Presently no irrigation water service remains and all water served is domestic. SMWC serves parts of both the City of Calimesa and the City of Yucaipa.

The Proposed Project would parallel, cross, or would be adjacent to the following existing utilities and facilities in Segment 4 (SCE, 2014; Data Response PU-1):

- AT&T fiber optic cable
- Beaumont–Cherry Valley Water line
- City of Beaumont sewer line
- Kinder Morgan pipeline

- Level 3 fiber optic cable
- Southern California Gas 10-inch gas pipeline
- Time Warner fiber optic cable
- Verizon fiber optic cable

D.17.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

Segment 5 extends from the City of Banning (MP 27.4) across the Morongo Band of mission Indians reservation (MP 36.9) and would be approximately 9.5 miles in length. Jurisdictions in this segment include unincorporated Riverside County, the City of Banning, and the Morongo Band of Mission Indians. Unincorporated Riverside County is described in Section D.17.1.2.3, Segment 3: San Timoteo Canyon. Any new information for the County is provided below. The City of Banning is described in Section D.17.1.2.4, Segment 4: Beaumont and Banning.

Police

The reservation Patrol provides patrol services on the reservation, which includes more than 35,000 acres of tribal property, urban roads, canyons, and other tribal assets. The reservation Patrol consists of the Traffic Division, Patrol Division, and Enterprise Security. Together, these divisions enforce tribal ordinances, monitor entryways onto the reservation and Morongo enterprises, patrol the reservation, and assist the Morongo Tribal Court.

Fire Services

The Morongo Fire Department responds to calls both on and off the reservation. The Morongo Fire Department includes a staff of 20 firefighters responsible for protecting 110 square miles of the reservation land as well as the residential community; tribal enterprises; and the 27-story, 44-acre casino. The Department has 20 full-time employees consisting of 18 firefighters (6 on each of 3 shifts) and 2 management staff.

Schools

The Morongo School is fully funded by the tribe and is tuition-free. The school currently serves more than 100 students in grades K through 8 on 3 campuses. It is not within the project study area.

Hospitals

There are no hospital or medical facilities on the reservation.

Table D.17-5 provides a list of public service and utility providers by jurisdiction.

Table D.17-5. Utility and Service Providers by Jurisdiction – Morongo Tribal Lands and Surrounding Areas

Morongo Tribal Lands (Riverside County)	
Natural gas & electricity – SCE, Southern California Gas Water – Morongo Band of Mission Indians Water Department Wastewater – Morongo Water and Wastewater Department Solid Waste – Morongo Public Works Department	Fire protection – Morongo Fire Department Police protection – Morongo Reservation Patrol Schools within 0.25 miles of Proposed Project – Hoffer Elementary School

Source: SCE, 2013.

Water

The Morongo Water Department, under the direction of the reservation Services Administrator's office, has the responsibility to provide a safe, reliable, and potable water supply to the reservation residents and commercial enterprises. The Water Department also maintains, operates, and provides non-potable water to customers where it is available, including the canyon irrigation systems. Water supply on the reservation consists of groundwater production wells using high-efficiency pumps and motors and exercising efficient pumping rates to offset high peak demand time periods. Morongo water infrastructure consists of over 30 miles of potable water mains, pressure-reducing stations, and storage reservoirs.

The Proposed Project would parallel, cross, or would be adjacent to the following existing utilities and facilities in Segment 5 (SCE, 2014; Data Response PU-1):

- Banning water lines (8-inch, 12-inch, and 30-inch)
- Morongo water line
- Questar natural gas pipeline
- SCE electric line
- Southern California Gas pipelines
- Unknown water line
- Unknown fiber optic line
- Verizon fiber optic line
- Weather Station

D.17.1.2.6 Segment 6: Whitewater and Devers

Segment 6 extends from the eastern boundary of the Morongo reservation (MP 36.9) to Devers Substation (MP 45) and is approximately 8 miles in length. Jurisdictions in this segment include unincorporated Riverside County, the BLM, and the City of Palm Springs. Unincorporated Riverside County is described in Section D.17.1.2.3, Segment 3: San Timoteo Canyon. Any new information for the County is provided below.

Police

The City of Palm Springs Police Department provides response service, criminal investigation, traffic enforcement, and preventive patrol for the City. The desired response time for priority one calls (emergencies) is 5 minutes and for priority 2 calls (non-emergencies) is 30 minutes. The department has mutual-aid agreements with other local law enforcement agencies.

The Palm Springs-South Coast BLM Field Office is located in Palm Springs. This field office has approximately 10 Law Enforcement Rangers (uniformed officers) that enforce laws and regulations in the prevention, detection, and investigation of crimes affecting public lands resources. They are responsible for conducting high-visibility patrols; conducting public contacts; enforcing federal laws and regulations; assisting local county or city police departments, other federal and state land management agencies, and BLM Special Agents investigating illegal activity on public lands; and generally providing for the safety of BLM employees and public land users.

Fire Services

The City of Palm Springs Fire Department provides fire, paramedic, and emergency services in the boundaries of Palm Springs and through mutual agreements in the City's Sphere of Influence, protecting 96 square miles of the Palm Springs area. There are five fire stations located throughout the city so that response time to any residence is under 5 minutes.

The Riverside County Fire Department, United States Forest Service (USFS), CALFIRE, and the BLM provide fire assistance for responses to urban and wildland fires, primarily in the Sphere of Influence of Palm Springs but outside of the City's boundaries. The Cathedral City Fire Department also provides additional assistance through an automatic aid agreement.

The BLM employs firefighters to participate in fuel reduction programs and to fight fires in its jurisdiction. The BLM Palm Springs–South Coast Field Office has 23 fire personnel (5 seasonal) and a Prescribed Fire Program to reduce the risk of catastrophic wildfires. Fire staff includes a Fire Management Officer and seven Fuels & Fire Mitigation Specialists. There are 2 fire stations serving the jurisdictions covered by this field office: the Pinyon Fire Station and the Morongo Valley Station.

Schools

Palm Springs Unified School District has 16 elementary schools, 5 middle schools, 3 comprehensive high schools, 1 continuation high school, alternative education programs, Headstart/State preschools, full-day Headstart programs, and childcare programs. It enrolls almost 24,000 students as of 2014 (SCE, 2013). No schools are located within the study area in Segment 6.

The BLM does not provide student education facilities.

Hospitals

The City of Palm Springs is served by the Desert Regional Medical Center and the Eisenhower Medical Center. Desert Regional Medical Center is located in the City of Palm Springs and provides emergency services, general med-surgical, acute care, and trauma center services. Advanced life support (ALS) ambulances and crews are posted at the Pierson Boulevard fire station and also patrol the City and SOI. Ambulance services are provided by American Medical Response (AMR), which has a service area encompassing the entire Coachella Valley. AMR typically has 10 ALS ambulances in the field, each with a crew of 2 paramedics; AMR currently maintains between 14 and 16 units in its Desert Cities District.

Eisenhower Medical Center, located in the City of Rancho Mirage, is also available to provide services to residents of Palm Springs and surrounding areas. This hospital is licensed for 261 patient beds, with 24-hour emergency services.

The BLM does not provide healthcare services or facilities.

Table D.17-6 provides a list of public service and utility providers by jurisdiction.

Table D.17-6. Utility and Service Providers by Jurisdiction – Whitewater and Devers

City of Palm Springs (Riverside County)	
Natural gas & electricity – SCE, Southern California Gas Water – Coachella Valley Water District, Desert Water Agency, and Metropolitan Water District of Southern California Wastewater – Veolia Water North America and Desert Water Agency Solid Waste (Landfills) – Waste Management	Fire protection – Palm Springs Fire Department and BLM firefighters Police protection – Palm Springs Police Department Schools within 0.25 miles of Proposed Project – None

Source: SCE, 2013.

Water

The Coachella Valley Water District, encompassing 995 square miles, extends from San Gorgonio Pass to the Salton Sea. The district provides water to approximately 284,700 residents, 72,900 acres of irrigated farmland, and a variety of commercial, resort, and industrial users. In addition to groundwater supplies, it obtains water from the SWP and the Metropolitan Water District of Southern California. The Metropolitan Water District of Southern California is described in Section D.17.1.2.1, Segment 1: San Bernardino.

The Desert Water Agency (DWA) is the water utility for the Palm Springs area and provides service to outlying Riverside County areas. DWA encompasses approximately 325 square miles and provides services to approximately 60,600 residents. The majority of water provided by DWA comes from underground aquifers and is extracted from existing wells within its service area. Other sources include water from Chino Creek, Snow Creek, and Falls Creek. DWA replenishes the underground aquifers, in cooperation with CVWD, with imported Colorado River water through the SWP.

The Proposed Project would parallel, cross, or would be adjacent to the following existing utilities and facilities in Segment 6 (SCE, 2014; Data Response PU-1):

- Mission Springs Water District water line
- Questar natural gas pipeline
- SCE fiber optic line
- Southern California Gas pipelines
- Unknown pipeline
- Verizon fiber optic line
- Wind farms

D.17.1.3 Environmental Setting for Connected Actions

In general, utilities and services are supplied by regional providers for both unincorporated and incorporated areas of the County. Information about utilities and public services for Riverside County already provided in Section D.17.1.2 is not repeated below. References to the specific sections have been provided, and additional setting information has been provided for areas not already covered under the setting discussion in D.17.1.2.

SCE provides electric power service to the areas and SoCalGas provides natural gas. Water is provided by local water departments where they exist, or is obtained from private wells. Solid waste is managed by the Riverside County Waste Management Department (RCWMD). The RCWMD operates six landfills (Badlands, Blythe, Desert Center, Lamb Canyon, Mecca II, and Oasis) and has an agreement for waste disposal with an additional private landfill (El Sobrante). RCWMD also administers several transfer station leases.

The Riverside County Sheriff's Department provides police services in unincorporated Riverside County and provides contract services to individual municipalities in Riverside County. The City of Blythe is served by the local police department, while the unincorporated area outside the city and Desert Center are served from the Sheriff Department's Colorado River Station in Blythe. This station provides service to the unincorporated area from Red Cloud Road (Desert Center) on the west, to the Arizona state line on the east, and the Imperial County line on the south to the San Bernardino County line on the north. The Palm Springs-South Coast BLM Field Office is located in Palm Springs. This field office has approximately 10 Law Enforcement Rangers (uniformed officers) that enforce laws and regulations in the prevention, detection, and investigation of crimes affecting public lands resources.

Fire stations are located in or near each of the solar project areas. A station is located in Desert Center. The Blythe area station is at the airport west of the city. All fire stations in Riverside County are dispatched by the California Department of Forestry and Fire Protection (CAL FIRE) Riverside Unit/Riverside County Fire Department Emergency Command Center and are part of the Integrated Fire Protection System under contract with the State.

Hospitals include John F. Kennedy Memorial Hospital in Indio, Eisenhower Medical Center in Rancho Mirage, Desert Regional Medical Center in Palm Springs, Angel View Children's Hospital in Desert Hot Springs, High Desert Medical Center in Joshua Tree (San Bernardino County), and Palo Verde Hospital in Blythe.

Desert Center Area. The Desert Center area includes BLM administered lands in Riverside County and unincorporated county land. The nearest populated areas include the unincorporated town of Desert Center, the Lake Tamarisk Park development, and Eagle Mountain Village. The nearest incorporated population centers include Blythe, Coachella, and Indio in Riverside County, and Twentynine Palms in San Bernardino County. Utilities and public services in the unincorporated portions of Riverside County are described in detail in Section D.17.1.2.3, Segment 3: San Timoteo Canyon.

The CAL FIRE station in Desert Center is the closest response resource to the area. Under the California Fire Master Agreement, the closest resource would be requested to respond until the responsible agency arrives to assume command.

Eagle Mountain Elementary School, part of the Desert Center Unified School District, is in the Desert Center area. The area also is served by the Palo Verde Unified School District (PVUSD), serving the City of Blythe and other remote areas of Riverside County, and the Desert Center Unified School District in Desert Center. Palo Verde Valley High School is about 40 miles east along I-10. Indio High School, La Quinta High School, and Page Middle School are about 45 miles west of the area along I-10.

Blythe Area. The Blythe area includes privately owned, undeveloped, and agricultural lands in eastern Riverside County including the City of Blythe. In addition, the area includes BLM administered lands.

The City of Blythe and the Riverside County Sheriff's Department provide law enforcement and public safety for the area. The City of Blythe Police Department (BPD) service area covers all land in the City limits (27 square miles). The City of Blythe Volunteer Fire Department and the Riverside County Fire Department (RCFD)/California Department of Forestry provide fire protection for the area. RCFD's East Desert Division encompasses the lower Coachella Valley, east to the Arizona state line. Hazardous materials emergency response for the area is provided by RCFD, which would handle the response to emergency releases of hazardous material or waste.

Palo Verde Unified School District serves Blythe and other remote areas of Riverside County and consists of three elementary schools, two middle schools, one high school, and a continuation high school.

D.17.2 Applicable Regulations, Plans, and Standards

The Proposed Project would cross federal, State, and local jurisdictions that have implemented regulations, plans, and standards regarding public services and utilities. To determine the Proposed Project's consistency with these government plans and policies, a thorough review of applicable policies was conducted.

D.17.2.1 Federal

43 Code of Federal Regulations (C.F.R.) §9212.2

This regulation requires the BLM to establish fire prevention orders to assist with wildland fire prevention. These efforts will also complement and support State and local wildfire prevention efforts throughout the geographical area. This geographical area consists of public lands within the California Desert Conservation Area (CDCA) and public lands outside the CDCA in Los Angeles, San Bernardino, Riverside, and San Diego Counties.

Federal Solid Waste Disposal Act and Resource Conservation and Recovery Act

The Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act [RCRA] of 1976) establishes requirements for the management of solid waste. The RCRA gives the EPA the authority to control hazardous waste, including the generation, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of nonhazardous solid wastes. The 1986 amendments to the RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The RCRA's key provisions include:

- Identification and listing of hazardous waste and standards applicable to hazardous waste
- Requires reporting of hazardous waste; permitting for storage, transport, and disposal; and includes provisions for oil recycling and Federal hazardous waste facilities inventories
- Management for solid waste, including landfills
- Applicability of Federal, State, and local laws to Federal agencies
- Procurement (recycling) provisions
- Citizen suits, judicial review, and enforcement authority
- Management, replacement, and monitoring of underground storage tanks

D.17.2.2 State

California Fire Code, § 902.2.2.1

Requires fire apparatus access roads to have a minimum unobstructed width of 20 feet. Other State regulations are related to health, fire, and building safety. These regulations include the California Health Code, the California Fire Code, and the Uniform Building Code (UBC), which are implemented at the local level by ordinances.

Title 12 California Code of Regulations § 1250-1258

This code, ("Fire prevention standards for Electric Utilities") provide clearance standards for electric structures, structure firebreaks, and electric conductors.

California Government Code §4216-4216.9

Article 2 of this law requires that an excavator must contact a regional notification center (Underground Service Alert) at least two working days prior to excavation of any subsurface installation. Underground Service Alert will notify the utilities that may have buried installations in the area. Representatives of the operator of the buried installations are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

California Integrated Waste Management Act of 1989

(Public Resources Code 40050 *et seq.* or Assembly Bill (AB) 939, codified in PRC 40000), administered by the California Integrated Waste Management Board (CIWMB), requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

California Solid Waste Reuse and Recycling Access Act of 1991

Signed into law in 1991, AB 1327 added Chapter 18 to Part 3 of Division 30 of the Public Resources Code. Chapter 18 required the CIWMB to develop a model ordinance for adoption of recyclable materials in development projects. Local agencies were then required to adopt the model, or an ordinance of their own, to govern adequate areas for collection and loading of recyclable materials in development projects by September 1, 1993. If a local agency had not adopted a model ordinance by that date, the CIWMB model would be adopted and enforced by the local agency.

On January 1, 2010, California's recycling and waste reduction efforts were streamlined into the State's Natural Resources Agency. In the agency, CalRecycle merges the duties of the former California Integrated Waste Management Board (CIWMB) with the Department of Conservation's Division of Recycling to manage the State's waste disposal and recycling efforts. The Construction and Demolition Waste Materials Diversion Requirements established in 2002 (SB 1374) require jurisdictions in their annual AB 939 report to include a summary of the progress made in diverting construction and demolition waste.

D.17.2.3 Local

The CPUC has jurisdiction over the siting and design of the Proposed Project because it authorizes the construction of investor-owned public utility (IOU) facilities. General Order (GO) No. 131-D Section III.C requires "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits." Table D.17-7 summarizes key elements of local applicable land use documents.

Table D.17-7. Local Land Use Documents Related to Public Services and Utilities

Document	Plans, Policies, Programs
City of Banning General Plan, Land Use Element: Public Facilities	**Goal:** Sufficient and appropriately located public facilities to serve the needs of the City's residents, businesses and visitors. **Policy 1:** The City shall take a leadership role with all providers of public services in the community to assure they provide adequate and quality levels of service based on future demands.
City of Banning General Plan, Police and Fire Protection Element	**Goal:** The highest possible quality and level of service for fire and police protection to preserve and protect the health, welfare and property of residents, business owners, visitors and property owners. **Policy 9:** The Fire Department shall maintain a 5-minute response time. **Policy 11:** The Fire Department Ambulance Services shall maintain a 5-minute response time.
City of Banning General Plan, Schools and Libraries Element	**Policy 3:** Schools and libraries shall be protected from excessive noise and traffic conditions, incompatible land uses, and the threat of on-site disturbance to the greatest extent practicable. **Program 3.A:** The City shall routinely evaluate and update the Land Use Element to assure that school and library sites are compatible with surrounding land uses, arterial roadways and other significant noise generators.
City of Banning General Plan, Public Services and Facilities, Water, Wastewater, and Utilities Element	**Policy 1:** The City shall coordinate between the City Utility Department-Water Division, Banning Heights Mutual Water Company, Beaumont/Cherry Valley Water Agency, San Gorgonio Pass Water Agency, California Regional Water Quality Control Board and Riverside County Environmental Health to protect and preserve local and regional water resources against overexploitation and contamination. **Policy 7:** The City shall continue to confer and coordinate with its solid waste service franchisee to maintain and, if possible, exceed the provision of AB 939 by expanding recycling programs that divert valuable resources from the waste stream and returning these materials to productive use.

Table D.17-7. Local Land Use Documents Related to Public Services and Utilities

Document	Plans, Policies, Programs
City of Beaumont General Plan, Community Development Element	**Policy 20:** The City of Beaumont will continue to oversee the development of adequate and dependable public services and facilities to support both existing and future development.
City of Beaumont General Plan, Community Development	**Policy 18:** The City of Beaumont will strive to ensure that there will be adequate water and wastewater system capacity to meet projected demand. **Policy 28:** The City of Beaumont will continue to protect water quality through effective wastewater system management.
City of Calimesa General Plan, Land Use Element – Infrastructure	**Policy 11.1:** Coordinate the provision of all public utilities and services to ensure a consistent, complete and efficient system of services to all residents.
City of Calimesa General Plan, Land Use Element – Public Services	**Policy 12.3:** Provide and maintain existing infrastructure and enhance public services levels to meet the needs of Calimesa residents.
City of Calimesa General Plan, Land Use Element – School Services	**Goal 13:** Coordinate planning and development proposals with the affected school district to ensure that adequate school facilities and services can be provided in a timely manner.
City of Colton General Plan, Land Use Element	**Goal LU-14:** Ensure adequate land area is available to support desired levels of City-provided public facility services. **Policy LU-14.1:** Review City public facilities physical plants and sites on a regular basis to determine whether adjustments are needed consistent with the Land Use Plan adopted City policies and ordinances. **Policy LU-21.8:** Ensure that safety services and sewer, water, and utility infrastructure are adequate to accommodate new development.
City of Colton General Plan, Open Space and Conservation Element	**Principle 3:** Conserve and protect open space needed for the preservation of air quality, water quality, water supply, waste disposal, noise abatement or public safety through zoning and other regulatory tools. **Standard 4:** Strict enforcement of water and air quality standards shall be applied to all industrial users through business license approvals, fire inspections and code enforcement of performance standards.

Table D.17-7. Local Land Use Documents Related to Public Services and Utilities

Document	Plans, Policies, Programs
City of Grand Terrace General Plan, Public Services and Facilities Element	**Goal 7.1:** Coordinate and balance the provision of public services with existing and planned development to eliminate service gaps, maximize the use of existing public facilities and services, provide a high level of quality public services at a reasonable cost, and maintain adequate services to meet the needs of current and future City residents and businesses. **Policy 7.1.4:** The City shall coordinate with public and private utility companies and agencies to assure the long-term provision of necessary public services including water, sewer, electrical, natural gas, telephone, cable TV and waste collection/recycling. **Policy 7.2.1:** Continue to work with Riverside Highland Water Company to provide efficient and economic distribution of an adequate water supply. **Policy 7.3.1:** Work with the City of Colton to ensure a quality wastewater treatment system that meets or exceeds all State and Federal health standards. **Policy 7.4.1:** Work with the City's franchise waste collection company to ensure an effective and efficient waste collection program for all City residents and businesses. **Goal 7.5:** Provide for adequate law enforcement and police protection services and facilities. **Policy 7.5.1:** Work with the County Sheriff's Department to ensure that adequate police personnel, response times, and equipment are available to meet current and future demands of the City's residents and businesses. **Goal 7.6:** Provide for adequate fire protection services and facilities. **Goal 7.7:** In cooperation with the Colton Joint Unified School District, provide adequate public education facilities and programs. **Policy 7.7.1:** Work with the Colton Joint Unified School District to provide expanded public education facilities that meet the current and future needs of the City's residents.
City of Loma Linda General Plan, Public Services and Facilities Element, Fire Protection Services	**8.2.2 Guiding Policy:** Provide for the protection of Loma Linda citizens and businesses from crime through maintenance of an adequate force of police officers, appropriate physical planning of new development, and a high level of public involvement in crime prevention. **Implementing Policy 8.2.2.1 Implementing Policy:** a. Strive to provide an adequate police force to respond to emergency calls within an average of 3.25 minutes from time of dispatch.
City of Loma Linda General Plan, Public Services and Facilities Element, Educational Facilities	**8.3.2.1 Implementing Policies:** ... b. Assist the various school districts in developing school sites and facilities to serve all neighborhoods in the City. e. Maintain land use regulations permitting the development of public and private educational facilities at appropriate locations within the Planning Area. Within lands planned for residential or mixed-use development, permit public and private schools along arterial and collector roads at the periphery of neighborhoods where traffic impacts created by the school on the local neighborhood can be minimized.
City of Loma Linda General Plan, Public Services and Facilities Element, Library Services	**8.4.2 Guiding Policy:** Provide library facilities and services necessary to meet the needs of the community.
City of Loma Linda General Plan, Public Services and Facilities Element, Police Protection Services	**8.2.2 Guiding Policy:** Provide for the protection of Loma Linda citizens and businesses from crime through maintenance of an adequate force of police officers, appropriate physical planning of new development, and a high level of public involvement in crime prevention. **8.2.2.1 Implementing Policies:** a. Strive to provide an adequate police force to respond to emergency calls within an average of 3.25 minutes from time of dispatch. b. Provide sufficient facilities and staff to ensure that the dispatch staff can collect emergency information and immediately forward requests for service to patrol units.
City of Loma Linda General Plan, Public Services and Facilities Element, Water Utilities	**Guiding Policy 8.7.2:** Provide a water system that supplies high quality water to serve existing and future needs of the City during peak use conditions, with sufficient water in storage reservoirs for emergency and fire protection.

Table D.17-7. Local Land Use Documents Related to Public Services and Utilities

Document	Plans, Policies, Programs
City of Loma Linda General Plan, Public Services and Facilities Element, Wastewater Management	**Guiding Policy 8.8.2:** Ensure a wastewater collection, treatment, and disposal system is available to serve existing and future residences, businesses, institutions, and other uses within the City of Loma Linda.
City of Loma Linda General Plan, Public Services and Facilities Element, Solid Waste Management	**Guiding Policy 8.9.2:** Reduce the amount of solid waste requiring disposal at landfills, enhancing the potential for recycling of the City's solid wastes.
City of Palm Springs General Plan, Safety Element	**Policy SA4.11:** Ensure adequate firefighting resources are available to meet the demands of new development, including the construction of midrise structures, by ensuring that: Response times do not exceed desired levels of service; ... **Policy SA4.12:** As areas of the City and its sphere of influence are developed, construction of new fire stations should be considered so that the Fire Department can continue to respond to any emergency call within six minutes of receiving the call at dispatch. **Goal SA7:** Provide quality police and fire protection to residents, businesses, and visitors of the City. **Policy SA7.1:** Maintain adequate resources to enable the Police Department to meet response-time standards, keep pace with growth, and provide high levels of service. **Policy SA7.4:** Periodically evaluate population growth, development characteristics, level of service, and incidence of crime within the City to ensure that an adequate level of police service is maintained. **Policy SA7.5:** Maintain adequate resources to enable the Fire Department to meet response-time standards, keep pace with growth, and provide high levels of service. **Policy SA7.6:** Provide safe firefighting facilities of adequate size and at the best locations to meet NFPA 1710 standards for response time. **Goal SA8:** Reduce the risk to life, property, and essential facilities through emergency preparedness and public awareness.
City of Palm Springs Recreation and Open Space Element, Water Resources	**Policy RC9.1:** Work with the Desert Water Agency, Coachella Valley Water District, and Mission Springs Water District to ensure that a sufficient quantity and quality of potable water is available for current and future residential, business, and visitor uses.
City of Redlands General Plan, Health and Safety Element, Electromagnetic Fields	**Guiding Policy 8.70b:** Insist on adequate setbacks from schools, housing, and care facilities for any additional high voltage power lines or substations to be constructed in the Planning Area. The California State Department of Education, School Facilities Planning Division maintains standards for distance from schools according to voltage.
City of Redlands General Plan, Health and Safety Element, Water Quality	**Guiding Policy 8.20h:** State Water Project water shall be considered, to the extent possible, as supplemental water, and shall be utilized only as necessary to meet demand.
City of Redlands General Plan, Open Space and Conservation Element, Water Supply and Conservation	**Guiding Policy 7.22a:** Minimize dependence on imported water by increasing entitlement in local surface sources, using wise groundwater management practices, conservation measures, and the use of reclaimed wastewater and nonpotable water for irrigation of landscaping and agriculture, where feasible. **Guiding Policy 7.22b:** The City of Redlands overlies a portion of the Bunker Hill Groundwater Basin. This Basin contains in excess of 3 million acre feet of water. This local supply source must be cleaned up, used to its full potential, and protected from outside interests. This requires the cooperation of all agencies within the Basin. **Implementing Policy 7.22f:** If the City's updated Water Master Plan shows water supply to be inadequate, increase supply and reduce demand or curtail development until adequate supplies are secured.

Table D.17-7. Local Land Use Documents Related to Public Services and Utilities

Document	Plans, Policies, Programs
City of Redlands General Plan, Open Space and Conservation Element, Waste Management & Recycling	**Implementing Policy7.24c:** Meet the mandatory waste diversion goals set by the State of 25 percent by 1995 and 50 percent by 2,000; reduce landfill disposal of household hazardous waste as much as feasibly possible.
City of San Bernardino General Plan, Public Services and Facilities Element	**Goal 7.1:** Protect the residents of San Bernardino from criminal activity and reduce the incidence of crime. **Goal 7.2:** Protect the residents and structures of San Bernardino from the hazards of fire.
City of San Bernardino, Utilities Element	**Goal 9.1:** Provide a system of wastewater collection and treatment facilities that will adequately convey and treat wastewater generated by existing and future development in the City's service area. **Goal 9.2:** Ensure that all wastewater collection and treatment facilities are operated to maximize public safety. **Goal 9.3:** Provide water supply, transmission, distribution, storage, and treatment facilities to meet present and future water demands in a timely and cost effective manner.
County of Riverside General Plan, Safety Element	**Policy S 5.1:** Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features. **Policy S.5.10:** Continue to utilize the Riverside County Fire Protection Master Plan as the base document to implement the goals and objectives of the Safety Element.
County of Riverside General Plan, Land Use Element	**Policy LU 5.1:** Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, transportation systems, and fire/police/medical services. **Policy LU 5.2:** Monitor the capacities of infrastructure and services in coordination with service providers, utilities, and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service. **Policy LU 5.4:** Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned rights-of-way and permanent easements, whose true land use is that of "public facilities." This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large scale general plan maps.
County of Riverside General Plan, Circulation Element, Major Utilities Corridor	**Policy C 25.1:** Promote and encourage efficient provisions of utilities such as water, waste-water, and electricity that support the County's Land Use Element at build out.
County of San Bernardino General Plan, Circulation and Infrastructure, Fire Protection	**Goal CI 16:** The County will protect its residents and visitors from injury and loss of life and protect property from fires through the continued improvement of existing Fire Department facilities and the creation of new facilities, but also through the improvement of related infrastructure that is necessary for the provision of fire service delivery such as water systems and transportation networks. **Policy CI 16.1:** Continue the consolidation efforts of the Fire Department to maintain the continued operation, services, facilities, and current infrastructure but also to ensure the provision of operations, services, facilities, and internal infrastructures into the future.
County of San Bernardino General Plan, Circulation and Infrastructure, Law Enforcement	**Goal CI 17:** The County will provide adequate law enforcement facilities to deliver services to deter crime and to meet the growing demand for services associated with increasing popula-tions and commercial/industrial developments. **Policy CI 17.1:** Appropriately prioritize calls for service and seek sufficient staffing levels to ensure response times are reasonable and efforts to deter crime are optimized. **Policy CI 17.8:** Develop and coordinate contingency responses to disasters, mutual aid needs, search and rescue operations, and other emergencies in concert with allied agencies.

Table D.17-7. Local Land Use Documents Related to Public Services and Utilities

Document	Plans, Policies, Programs
County of San Bernardino General Plan, Land Use Element, Countywide Goals and Policies	**Goal LU 8:** Beneficial facilities, such as schools, parks, medical facilities, sheriff and fire stations, libraries, and other public uses, as well as potentially hazardous sites, will be equitably distributed throughout the County. **Policy LU 8.3:** Locate fire department facilities in such a fashion as to maximize service delivery in an equitable fashion to all portions of the County.

Source: SCE, 2013; Chapters 4.14 Public Services and 4.17 Utilities and Service Systems.

D.17.3 Environmental Impacts of the Proposed Project

D.17.3.1 Approach to Impact Assessment

This section considers the potential impact to and disruption of public services and utilities within the jurisdictions through which the Proposed Project would cross. Many public services and utilities would experience minor impacts. However, because of the use of water and the potential need to disrupt services for extended periods of time during construction, some of the impacts may be moderate. The metrics used to compare alternatives would be the length of time required for construction of the different alternatives and whether that would result in a longer disruption time. If an alternative required a substantially longer construction timeframe than others or required substantially more services than others, this would also be used to compare impacts to public services.

D.17.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures (APMs) related to utilities and public services.

D.17.3.2 Impact Criteria

Using the following criteria for the purposes of analysis, the project or an alternative would impact public services if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
  - Fire protection
  - Police protection
  - Schools
  - Parks
  - Other public facilities

Using the following factors for the purposes of analysis, the project or an alternative would impact utilities if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs
- Comply with federal state, and local statutes and regulations related to solid waste
- Disrupt the existing utility system or cause a collocation accident

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27).

D.17.3.3 Impacts and Mitigation Measures

Impact UPS-1: Project construction and operation would increase the need for public services and utilities

Construction activities for the Proposed Project are planned to occur between May 2016 and May 2020. Construction would require: establishing temporary staging yards used as reporting locations for workers, vehicle and equipment parking, and material storage; modification of existing substations; rehabilitation and construction of new access and spur roads; preparation of laydown/work areas for the new structure pad locations; grading and clearing of vegetation for each structure pad location; foundation installation for each structure; and installation of the new structures and conductors.

Construction of the Proposed Project would require the use of temporary shoo-fly facilities. A shoo-fly is a temporary electrical line on a temporary structure that is used during construction to maintain electrical service to the area while allowing portions of a permanent line to be taken out of service. The shoo-fly facilities would be removed after construction is completed.

The Proposed Project would also require relocation of portions of existing 66 kV and 12 kV lines and upgrades to existing telecommunications. Some of the relocation of the 12 kV circuits and telecommunication facilities would include underground systems.

The following paragraphs describe the impacts of the Proposed Project during construction on utilities and public services. Because the Proposed Project is an upgrade of existing facilities, the impacts of the Proposed Project during operations and maintenance are anticipated to be the same as or substantially similar to the baseline. This is because operations and maintenance would require a similar workforce and a similar need for public services and utilities as currently occurs. Therefore, the analysis focuses on construction impacts rather than operations and maintenance impacts.

Police Protection. The need for law enforcement services during construction would be unlikely, except in the event of an emergency. Staging yards would be illuminated for security purposes. SCE may hire a local security company to provide 24-hour attendance at the staging and work areas during construction, to minimize the involvement of local law enforcement (SCE, 2013). Proposed Project construction activities would not require the expansion of existing police stations or services because of the temporary and short-term nature of construction at any one location. The need for emergency services may occur during the construction phase of the Proposed Project but the existing emergency services would be capable of addressing any emergency.

Fire Protection. Portions of the Proposed Project are located in a very high fire hazard safety zone, as described in Section D.20, Wildland Fire. Construction activities would include ignition sources as well as a general increase in humans and human activity in areas of fire hazard, and therefore would result in an increased potential risk of fire and an increased need for emergency services. This would be substantial because of the length of construction time and the already high risk and cost of fires throughout California.

Construction activities would be conducted according to standard fire prevention protocols and SCE would be required to prepare and implement a fire management plan during construction of the project as required by Mitigation Measure WF-1a (Prepare and Implement a fire management plan) that would be reviewed and approved by the federal, State, and local fire jurisdictions within the Proposed Project area. SCE would be required to fully implement this plan during construction and would identify responsibilities and duties and would include restrictions on certain activities during red-flag warning days.

Proposed Project construction activities would not require the expansion of existing fire stations or fire protection services with implementation of the Fire Management Plan.

Emergency Services. Construction of the project and equipment would impede emergency access due to road closures, project use of fire and access roads, and potentially blocked property entrances during construction. SCE would apply for and obtain all necessary State, county, and local permits (e.g., traffic control, lane closure, and encroachment) for construction activities in or affecting a public street ROW, private roadway, or driveway. Additionally, Mitigation Measure T-1b (Prepare traffic control plans) would require SCE to prepare Traffic Control Plans that would include measures to avoid disruptions or delays in access for emergency service vehicles and to keep emergency service agencies fully informed of road closures, detours, and delays. Police departments, fire departments, ambulance services, and paramedic services shall be notified at least one month in advance by SCE of the proposed locations, nature, timing, and duration of any construction activities affecting roads and advised of any access restrictions that could impact their effectiveness. This mitigation measure would reduce any impacts to response times and access for these services. The need for emergency services may occur during the construction phase of the Proposed Project. This would be for work-related injuries. The number of such injuries is typically low and would not be anticipated to significantly affect the provision of existing emergency services or require the provision of service beyond existing capacities.

Schools. Construction of the Proposed Project would occur over approximately 36 to 48 months and could require a limited amount of accommodations for workers during construction. During peak construction periods, there would be up to approximately 340 construction-related workers per day. There may be a need for temporary accommodations (local hotels or motels) during the construction phase for non-local laborers while they work on particular components of the Proposed Project's construction. It is unlikely that these individuals would trigger any additional demand for public schools because of the temporary nature of their work. While it is possible that some of the workforce would relocate for the duration of the construction and could bring school-aged children into the respective school districts within the area of the Proposed Project, this number is likely to be small, as discussed in Section D.8 Socioeconomics and Environmental Justice. The potential temporary increase of school-aged children would not substantially affect school enrollment or impact the performance objectives of any local public schools and would not require the construction of school facilities.

Parks. There are a number of parks on, adjacent to, and near the Proposed Project, see Table D.15-1 in Section D.15, Recreation. As described for schools, while there may be some construction workers who chose to relocate for the duration of the construction and could bring school-aged children into the jurisdictions along the route, this number is likely to be small. The temporary increase of children or families is not anticipated to affect the existing parks or their management goals and objectives.

Wastewater. The Proposed Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board or require the construction of new wastewater treatment facilities or expansion of existing facilities. Water would be used during construction to control dust and for other purposes but would be used on site and would not result in wastewater flows being generated. Small volumes of wastewater would be generated by the construction crews, such as in the use of portable toilets that would be provided for workers during the construction phase. The wastewater generated by the portable toilets is likely to be small and would not exceed existing capacity at receiving wastewater plants. SCE would be required to abide by existing regulations when disposing of wastewater from portable toilets.

Stormwater Drainage Facilities. Construction activity associated with the Proposed Project does not require the development of large-scale impermeable surfaces that would increase the amount of stormwater discharge from the site, or that would require construction of new off-site stormwater drainage facilities or expansion of existing facilities. The Proposed Project foundations and substation improvements would be the only impermeable surfaces. Because no new large-scale impermeable surfaces are proposed, existing facilities would be able to accommodate the existing stormwater flows, as the volume and velocity of stormwater flow is expected to be similar to existing conditions.

Water. SCE estimates that it would use up to 250 acre-feet of water per year for construction (SCE, 2014a, Data Response PU-2). This would be used for fugitive dust control, vegetation restoration, and soil compaction/concrete placement. At this time, SCE has not identified specific water purveyors to provide for the construction water needs. Over the nearly 50-mile right-of-way, water could be obtained from any of 14 possible local water districts (see Table B-8 in Section B). These local water districts use a combination of surface water and groundwater for water supply. As shown in Table B-8 in Section B, the total water supply from the 14 identified water districts exceeded total water use within those districts by 22,597 acre-feet in 2010 (the most recent year with complete data). Water supply and water use data were not available for all 14 of the identified districts. However, based on the available data, water supply exceeds water use in the area by almost an order of magnitude more than SCE's proposed construction water demand.

While the use of water is short-term during construction, using potable water for construction would reduce the amount of available potable water for the local areas during a time when California is experiencing a drought and some locations are already experiencing or may experience water shortages. Mitigation Measure UPS-1a (Use non-potable water for construction) would require SCE to use non-potable water for dust control and soil compaction whenever feasible.

Other Public Facilities. Other public facilities, such as hospitals, are located throughout the project area. These public facilities may be used during construction by workers who are injured on the job or become ill, or as described for schools, by construction workers who choose to relocate for the duration of the construction of the Proposed Project and bring families into these public facilities' jurisdictions. However, the number of workers and workers' families that would use these public facilities is likely to be small. As discussed in Section D.8 Socioeconomics and Environmental Justice, relatively few new workers and their families would move to the area. Any temporary increase in use of the public facilities by the construction workforce or their families is not anticipated to affect the existing public facilities or their performance objectives.

Solid Waste Disposal. Construction activity associated with the Proposed Project would require the disposal of solid waste, including non-recyclable existing transmission structures and components that would be removed as well as packaging for new project components, spoiled materials, and excavated soil that is not re-used as backfill. Many of the existing transmission structures and components (including metallic structures and components) would be recycled. Depending on the nature of the materials, non-recyclable solid waste would be disposed of in a non-hazardous sanitary landfill or hazardous material disposal facility, as appropriate. Based on current available data, the two nearest regional landfills (Badlands Sanitary Landfill and Lamb Canyon Sanitary Landfill) have a combined remaining capacity of approximately 33.7 million cubic yards. This available capacity is more than sufficient to accommodate all of the solid waste that would be generated during construction of the Proposed Project (CalRecycle, 2015). To address impacts resulting from water use, potential demand for fire services, and potential adverse effects on the ability of emergency service vehicles to reach destinations, the following mitigation measures would be required.

Mitigation Measures for Impact UPS-1: Project construction and operation would increase the need for public services and utilities

UPS-1a **Use non-potable water for construction purposes.** Project water supply for dust control, soil compaction activities, and site restoration/revegetation shall be obtained from non-potable sources, as feasible, and ensured in a water contract through a local water agency or district. The Applicant shall provide a letter describing the availability of non-potable water and efforts made to obtain it for use during construction to the CPUC and BLM a minimum of 60 days prior to the start of construction.

WF-1a **Prepare and implement a Fire Management Plan.** (Full text included in Section D.20.)

T-1b **Prepare traffic control plans.** (Full text included in Section D.16)

Impact UPS-2: Construction would disrupt existing pipelines and utility systems or cause a collocation accident

Construction within the existing ROW would result in the collocation of new structures and power lines adjacent to and across existing utility lines. It would also require the use of shoo-fly structures in multiple locations adjacent to the existing lines. As described in Section D.17.1.2, the route would parallel and cross several transmission lines, distribution lines, sewer lines, natural gas pipelines, fiber optic cables, brine lines, storm drains, water pipelines, and wind farms. There could be the potential for service interruptions of these utilities or preclusion of access to some of the utilities during construction of the Proposed Project.

SCE is required to contact a regional notification center at least two days prior to excavation of any sub-surface installation by Section 1, Chapter 3.1, "Protection of Underground Infrastructure," Article 2 of California Government Code §§4216-4216.9. This action would cause the notification center (Underground Service Alert) to notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area. The location of all underground electric, water, gas, cable or telecommunications lines within the vicinity (at least 1,000 feet) of the Proposed Project would be marked.

Compliance with California Government Code §§4216-4216.9 would reduce the likelihood of accidental disruptions. However, accidental disruptions could still occur along the route especially due to the large number of underground utilities and the need to keep some of the existing transmission lines working during construction, making construction activities more challenging. Mitigation UPS-2a (Protect pipelines and overhead and underground utilities) would be required to reduce the risk of accidental disruptions and to ensure that existing facilities are identified and avoided and that proper coordination with other utilities occurs.

The Proposed Project crosses natural gas pipelines, some of which may require cathodic protection. Based on preliminary research SCE expects seven locations to have pipelines that potentially require the installation of new or modified cathodic protection. As described in Section B.3.3.18, SCE or a contractor would perform a detailed engineering study to evaluate the long-term operational impacts of the Proposed Project's electrical system on the pipelines as it relates to corrosion and maintenance safety issues. Based on this report, SCE would determine if cathodic protection were needed and if so, whether an existing system is sufficient for the new electrical configuration or if additional or upgraded facilities would be installed. After establishing the need for cathodic protection, SCE would install a range of options that include but are not limited to deep ground rods, zinc ribbon mitigation wire, and gradient control mats, to reduce the impacts of the Proposed Project on existing pipelines.

Mitigation Measures for Impact UPS-2: Construction would disrupt existing pipelines and utility systems or cause a collocation accident

UPS-2a **Protect pipelines and overhead and underground utilities.** Prior to commencing construction, SCE shall perform engineering studies to determine whether and what cathodic protection would be required on pipelines potentially affected. SCE shall submit to the CPUC and BLM written documentation of the following:

- Evidence of coordination with all pipeline and utility owners with facilities in the vicinity of planned construction, including their review of SCE's construction plans and a description of any protective measures or compensation to be implemented to protect affected facilities;
- Copy of the Applicant's database of emergency contacts for pipelines and utilities that may be in close proximity or require monitoring during construction of the project; and
- Evidence that the project meets all applicable local requirements.

D.17.3.4 Impacts of Connected Actions

The construction workforce for solar energy facilities in Desert Center and Blythe areas would temporarily increase the local population, but would not require construction or alteration of physical facilities to provide adequate education, law enforcement, parks and recreation, hospital facilities and emergency response services, or electrical, natural gas, public water, sewer, or solid waste facilities. Following construction, operation of these solar projects would require a nominal workforce as most solar plants are unmanned, and it is not anticipated that these projects would increase the local population. Therefore, there would be no substantial demands on utilities or public services as a result of operation of the solar facilities.

The majority of the projected construction workforce at each solar facility would likely seek housing closer to the specific solar project sites (within a two-hour driving distance) or seek temporary housing during the week and commute home over the weekend. It would be unlikely that construction workers would relocate permanently to a project site with their families due to the temporary nature of the construction. Therefore, the temporary addition of construction workers to an area's population is not anticipated to increase school enrollment or warrant the need for new or expanded parks and recreational facilities.

The temporary increase of construction workers could increase demands on police services. However, during construction of solar facilities, on-site security would include trained personnel whose primary responsibility would be to control ingress and egress of personnel and vehicles, perform fire and security watch during off hours, and perform security badge administration, all of which would minimize the potential need for response from the law enforcement agencies. The construction workforce for all projects is expected to be hired generally from within the available regional workforce. Because project construction activities are not anticipated to increase the local population, no new or expanded law enforcement facilities or increased staff levels within the areas would be required. Construction of solar facilities and their associated gen-tie lines would generate truck and employee traffic along haul routes and at any given project area, which could temporarily increase the accident potential in these areas during the construction period. However, the additional volume of traffic associated with workers commuting to the sites during construction would be temporary and it is anticipated that personnel and equipment from the sheriff's department, nearby cities, and the California Highway Patrol (CHP) would be sufficient to respond to incidents. Project construction in each of the areas is not expected to adversely affect the CHP's ability to patrol the highways.

Development of the connected solar projects would not require construction or expansion of public water treatment and/or service systems or additional entitlements or resources. Solar PV facilities would have limited water needs during construction (i.e., for dust suppression and other construction needs) and operation (for maintenance needs). While water would be used during construction activities, the construction of new expanded public water facilities would not be required as there are adequate facilities in both connected action areas. Sanitary facilities during construction would be provided by portable units serviced by licensed providers. In addition, these projects likely would not exceed wastewater treatment requirements during construction, because they likely would not connect to the public sewer system given the sites are undeveloped lands.

Impact UPS-1: Project construction and operation would increase the need for public services and utilities

Desert Center Area. The solar projects in the Desert Center area would include development of about 950 MW of solar generation (500 MW of solar thermal and 450 MW of solar PV) on a total of approximately 9,500 acres of land, including the Palen Solar Power Project, EDF Desert Harvest, and 2 solar PV projects. As described above the projects in this Study Area would not greatly affect service ratios, response times, or other performance objectives relating to law enforcement, schools, or parks.

While the Palen Solar Power Project, EDF Desert Harvest Project, and 2 solar PV projects would increase the number of individuals within the area during construction, the increase would not be substantial and would not necessitate new or expanded utilities or public services or staff levels as explained above. The environmental analysis of the Palen Solar Power Project noted that during construction and operation there is the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, hydraulic fluid, mineral oil, insulating fluid at the power plant switchyard or flammable liquids, explosions, and over-heated equipment, may cause small fires. Major structural fires in areas with automatic fire detection and suppression systems are unlikely to develop at power plants. The Palen project would rely on both on-site fire protection systems and local fire protection services. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, would be provided by the RCFD. During construction, the permanent fire protection systems proposed for the project would be installed as soon as practical. In addition, portable fire extinguishers would be placed throughout the site at appropriate intervals and periodically maintained. Safety procedures and training would be implemented according to the guidelines of the Construction Fire Protection and Prevention Plan for the project. The Palen Solar Power Project has incorporated various types of mitigation including funding to help the RCFD with equipment and response times.

Blythe Area. The solar projects that would be developed in the Blythe area would be located predominately on undeveloped private and public lands in eastern Riverside County. These areas have a low population density typical of the southern California desert. Solar facilities would represent a land use change for the area of approximately 4,200 acres from agricultural fields and vacant lands to solar facilities and supporting gen-tie lines connecting to the Colorado River Substation. The construction workforce for solar energy facilities would temporarily increase the local population of the area, but would not require construction or alteration of physical facilities to provide adequate education, law enforcement, parks and recreation, hospital facilities and emergency response services, or electrical, natural gas, public water, sewer, or solid waste facilities. After construction, operation of the solar projects in the Blythe area would require a nominal workforce as most solar plants are unmanned, and it is not anticipated that these projects would increase the local population. Therefore, there would be no substantial demands on utilities or public services as a result of operation of the solar facilities.

During construction, there is the potential for fires. Electrical sparks, combustion of fuel oil, hydraulic fluid, mineral oil, or insulating fluid at substations, or flammable liquids, explosions, and over-heated equipment may cause small fires. The solar projects in the Blythe area would result in an increase in demand for fire protection services over existing levels during construction. The operational capabilities to handle technical rescues at electrical facilities, such as confined space/trench rescue/high angle rescue, may require increased staffing, training, and equipment. New or upgraded fire facilities may be required in order to accommodate additional staffing and fire rescue apparatus for solar facilities. Specialized rescue equipment may also be required in order to service the proposed gen-tie lines, which will require proper storage and maintenance to ensure optimal performance in the event of an emergency.

The solar projects in the Blythe area are within the service area of the RCFD and City of Blythe Volunteer Fire Department. Pursuant to Riverside County Ordinance 659, the project applicant would be required to pay a development impact fee (ranging from $2,035 to $3,039 per acre) for fire services "in order for the County to construct or acquire the needed facilities" (Riverside, 2006). Each of the solar projects likely would fall within adequate service levels, but RCFD would need to determine service adequacy at the time each project undergoes environmental review. Typically, RCFD does require impact fees as part of solar energy projects. If facilities are constructed or acquired using funds provided by the solar project applicants, and if new or physically altered fire protection facilities are paid for with the funds from these projects, the construction of such new facilities would be an indirect environmental effect resulting from the implementation of these solar projects in the Blythe area. Typical mitigation to avoid adverse effects on the RCFD would be similar to that applicable to the Palen Solar Power Project discussed above for Desert Center area, where funding is provided to the RCFD. Compliance with Riverside County Ordinance 659 and the resultant impact fees (to be determined on a project-by-project basis by RCFD) for fire services would help ensure that adequate new or expanded services and facilities are in place for projects in the area.

In the event of an on-site accident during construction, the RCFD would provide first responder emergency medical care. The nearest RCFD fire stations are staffed full-time, 24 hours, 7 days a week, with a minimum three-person crew, including paramedics. Once a patient is transported, a number of local area hospitals are available to provide emergency medical care. While a high number of construction employees would be located on-site, local area emergency medical facilities are expected to adequately handle any worksite accidents requiring their attention. Minor injuries could be treated at Palo Verde Hospital in Blythe. Injuries resulting in significant trauma would be treated at the Desert Regional Medical Center. Construction would not require new or expanded hospital facilities or personnel or result in the increase in emergency responder staff levels within the Study Area of eastern Riverside County.

Impact UPS-2: Construction would disrupt the existing utility systems or cause a collocation accident

The solar projects that would be developed in the Desert Center and Blythe areas would be located predominately on undeveloped private and public lands. As such, these areas may not have extensive underground or overhead utilities. However, since approximately 12,000 acres lands would be converted to solar facilities and the associated gen-tie lines, there is a potential for disruptions to existing utilities, such as transmission lines, distribution lines, sewer lines, natural gas pipelines, fiber optic cables, irrigation lines, storm drains, and water pipelines. There could be the potential for service interruptions of these utilities or preclusion of access to some of the utilities during construction of solar facilities and their gen-tie lines.

Project applicants typically are required to contact a regional notification center (i.e., Underground Service Alert) at least two days prior to excavation of any subsurface installation by Section 1, Chapter 3.1, "Protection of Underground Infrastructure," Article 2 of California Government Code §§4216 4216.9. This action would cause the notification center to notify the utilities that may have buried lines within 1,000 feet of a project. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area. Compliance with this California Code requirement would reduce the likelihood of accidental disruptions. However, in the event of an accidental disruption, mitigation measures would be required to reduce the risk of accidental disruptions and to ensure existing facilities are identified and avoided and proper coordination with other utilities occurs. For example, Proposed Project Mitigation Measure UPS-2a (Protect overhead and underground utilities) is a typical mitigation measure that would help offset the effects of disruptions to collocated utilities or the potential for collocation accidents.

D.17.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.17.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Utilities and public services within the ROW are described by segment in Section D.17.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.17.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Two impacts related to utilities and public services were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.17.3.3, except where otherwise noted.

Impact UPS-1: Project construction and operation would increase the need for public services and utilities

An increase in the need for public services and utilities could occur as a result of construction activities, the needs of the project workforce, and during project operation. Because the project would not increase local population or develop occupied structures needing fire protection, the project would not require the expansion of existing fire stations or fire protection services. Likewise, because there would not be a substantial population increase associated with the construction of the project or it operation, there would not be a need to develop additional school capacity or parks, or to increase water or wastewater facilities or develop stormwater drainage facilities. Available capacity in existing solid waste disposal facilities is more than sufficient to accommodate all of the solid waste that would be generated during construction.

The Tower Relocation Alternative would not increase or decrease the need for utilities or public services as compared to the Proposed Project, as the only difference would the location of selected towers. The relocated towers would be moved approximately 50 feet farther from the southern edge of the ROW. The minor adjustment to the location of these towers would not change the effects on public services and utilities compared to those of the Proposed Project, although the length of the construction period would likely be extended under this alternative. The same mitigation measures recommended for the project as a whole would apply to these relocated towers: Mitigation Measures UPS-1a (Use non-potable water), WF-1a (Prepare and implement a fire management plan), and T-1b (Prepare traffic control plans). Together, these three mitigation measures would ensure that this adverse effect would be minor.

Impact UPS-2: Construction would disrupt existing pipelines and utility systems or cause a collocation accident

Construction within the existing ROW would result in the collocation of new structures and power lines adjacent to and across existing utility lines. The route would parallel and cross several transmission lines, distribution lines, sewer lines, natural gas pipelines, fiber optic cables, brine lines, storm drains, water pipelines, and wind farms. There could be the potential for service interruptions of these utilities or preclusion of access to some of the utilities during construction.

The relocation of towers approximately 50 feet farther from the southern edge of the ROW would not change the Proposed Project's potential to disrupt existing pipelines and utility systems or cause a collocation accident. Mitigation Measure UPS-2a (Protect pipelines and overhead and underground utilities) would require SCE to coordinate with pipeline and utility owners in the project vicinity to ensure these facilities are protected, reducing the severity of this adverse effect.

D.17.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Two impacts related to utilities and public services were identified for the Proposed Project. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.17.3.3, except where otherwise noted.

Impact UPS-1: Project construction and operation would increase the need for public services and utilities

This alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. The underground subtransmission line would not increase the need for public services and utilities compared to the Proposed Project. The same mitigation measures recommended for the project as a whole would apply to the underground segment: Mitigation Measures UPS-1a (Use non-potable water), WF-1a (Prepare and implement a fire management plan), and T-1b (Prepare traffic control plans). Together, these three mitigation measures would ensure that this adverse effect would be minor.

Impact UPS-2: Construction would disrupt existing pipelines and utility systems or cause a collocation accident

This alternative would place a segment of 66 kV subtransmission line underground instead of on overhead poles. This alternative would increase the amount of subsurface disturbance compared to the Proposed Project, which would increase the risk of disruption to existing pipelines and other underground utility systems. The Proposed Project also includes some underground subtransmission segments, and like those segments, construction of this alternative would result in the collocation of new structures and power lines adjacent to and across existing pipelines and utility lines. Compliance with existing regulations would require SCE to contact a regional notification center that would notify existing utilities that have buried lines within 1,000 feet of the project and require them to mark the specific locations of their facilities reducing the likelihood of accidental disruptions. However, disruptions could still occur along the line due to the number of pipelines and utilities the line crosses, resulting in a substantial adverse effect absent mitigation. Mitigation Measure UPS-2a (Protect pipelines and overhead and underground utilities) would require SCE to coordinate with pipeline and utility owners in the project vicinity to ensure these facilities are protected, reducing the severity of this adverse effect. Adverse effects to natural gas pipelines due to corrosion would be minor because SCE would study the potential for such adverse effects and install cathodic protection where necessary.

D.17.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Two impacts related to utilities and public services were identified for the Proposed Project. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.17.3.3, except where otherwise noted.

Impact UPS-1: Project construction and operation would increase the need for public services and utilities

An increase in the need for public services and utilities could occur as a result of construction activities and needs, the needs of the project workforce, and during operations. The need for law enforcement services during construction would be unlikely, except in the event of an emergency. Staging yards would be illuminated for security purposes. SCE may hire a local security company to provide 24-hour attendance at the staging and work areas during construction, to minimize the involvement of local law enforcement (SCE, 2013). Proposed Project construction activities would not require the expansion of existing police stations or services because of the temporary and short-term nature of construction at any one location. The need for emergency services may occur during construction but the existing emergency services would be capable of addressing any emergency. Portions of the project area are in a very high fire hazard safety zone. Construction activities would include ignition sources as well as a general increase in humans and human activity in areas of fire hazard. This would result in an increased potential risk of fire and an increased need for emergency services should a fire occur. Because the project would not increase local population or develop occupied structures needing fire protection, the project would not require the expansion of existing fire stations or fire protection services. Likewise, because there would not be a substantial population increase associated with the construction of the project or it operation, there would not be a need to develop additional school capacity or parks, or to increase water or wastewater facilities or develop stormwater drainage facilities. Available capacity in existing solid waste disposal facilities is more than sufficient to accommodate all of the solid waste that would be generated during construction.

This Phased Build Alternative would reduce the amount of construction compared to the Proposed Project, and consequently could reduce the need for public services and utilities compared to the Proposed Project. However, the extended construction period would increase the period over which services might be needed. The biggest difference in demand for public services and utilities between this alternative and the Proposed Project would be the reduction in water demand during construction.

The same as for the Proposed Project, construction of this alternative would increase temporarily the need for public services and utilities, including police protection, fire protection, schools, parks, water, and solid waste disposal. However, the increase would be temporary and is anticipated to be minor for most public services and utilities. Although adverse effects to the regional water supply would not be substantial and no mitigation is required, to further reduce adverse effects of the use of potable water, implementation of Mitigation Measure UPS-1a (Use non-potable water) is recommended to reduce water usage for construction.

Construction activities would increase the risk of fire hazards due to an increase in ignition sources. Mitigation Measure WF-1a (Prepare and implement a fire management plan) would reduce the severity of this adverse effect because it would require SCE to prepare and implement a Fire Management Plan that would be reviewed and approved by appropriate fire jurisdictions within the Proposed Project area. The full text of this mitigation measure is presented in the analysis for Wildland Fire in Section D.20.3.3. The increased need or disruption to emergency services due to road closures, use of fire and access roads, and potentially blocking property entrances could result in decreased response times or adversely affect other performance objectives. With implementation of Mitigation Measure T-1b (Prepare traffic control plans) this adverse effect would be minor. The full text of this mitigation measure is presented in the analysis for Transportation and Traffic in Section D.16.3.3. Together, these three mitigation measures would ensure that this adverse effect would be minor.

Impact UPS-2: Construction would disrupt the existing utility systems or cause a collocation accident
Construction within the existing ROW would result in the collocation of new structures and power lines adjacent to and across existing utility lines. The route would parallel and cross several transmission lines, distribution lines, sewer lines, natural gas pipelines, fiber optic cables, brine lines, storm drains, water pipelines, and wind farms. There could be the potential for service interruptions of these utilities or preclusion of access to some of the utilities during construction.

This alternative would reduce the amount of ground disturbance compared to the Proposed Project, and consequently would reduce the potential to cause a disruption to existing pipelines and utility systems. Because fewer transmission lines would be replaced in this alternative compared to the Proposed Project, the potential for a collocation accident would be reduced slightly.

The same as for the Proposed Project, construction of this alternative would result in the collocation of new structures and power lines adjacent to and across existing pipelines and utility lines. Compliance with existing regulations would require SCE to contact a regional notification center that would notify existing utilities that have buried lines within 1,000 feet of the project and require them to mark the specific locations of their facilities reducing the likelihood of accidental disruptions. However, disruptions could still occur along the line due to the number of pipelines and utilities that the line crosses, resulting in a substantial adverse effect absent mitigation. Mitigation Measure UPS-2a (Protect pipelines and overhead and underground utilities) would require SCE to coordinate with pipeline and utility owners in the project vicinity to ensure these facilities are protected, reducing the severity of this adverse effect.

Adverse effects to natural gas pipelines due to corrosion would be minor because SCE would study the potential for such adverse effects and install cathodic protection where necessary.

D.17.5 Environmental Impacts of No Action Alternative

D.17.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

No Action Alternative Transmission Lines and Beaumont Substation. The No Action Alternative would be approximately 3 miles south of the Proposed Project alignment. This location would pass fewer sensitive receptors such as schools and hospitals. The types of utilities that would be potentially affected and the potential impacts to them would be similar to those for the Proposed Project, or would be fewer, as much of the route is in undeveloped land. Compliance with California Government Code requirements for identification of subsurface utilities would address impacts to utilities below ground. Similarly, the No Action Alternative would have similar levels of service needs (fire, public safety, and medical) as the Proposed Project, and would have comparable water and landfill demands. Effects on schools, parks, and other community assets would be similar as well.

D.17.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b.

The need for law enforcement services during construction of this alternative would be unlikely, except in the event of an emergency. The need for emergency services may occur during the construction phase of this alternative, but the existing emergency services would be capable of addressing any emergency. The majority of the route is located in a very high fire hazard safety zone. Construction activities would include ignition sources as well as a general increase in humans and human activity in areas of fire hazard and therefore would result in an increased potential risk of fire and an increased need for emergency services. This would be substantial because of the length of construction time and the already high risk and cost of fires throughout California. Construction of the project and equipment would impede emergency access due to road closures, project use of fire and access roads, and potentially blocked property entrances during construction. These adverse effects would be minor due to the mostly rural character of the surrounding land and the use of an existing transmission corridor for this alternative.

Construction of the No Action Alternative Option 2 would require a limited amount of accommodations for workers during construction, and it is unlikely that these individuals would trigger any additional demand for public schools because of the temporary nature of their work. The corridor crosses Weir Canyon Regional Park between MP 37.3 and MP 38. Construction activities could temporarily disrupt recreational activities in this park. However, neither construction of the new 500 kV circuit nor the influx of construction workers and their families is expected to substantially increase demand for or use of parks in the areas surrounding the corridor. Construction and operation of this alternative would not require the expansion of or construction of new facilities for wastewater, stormwater drainage, or municipal water supply systems. Other public facilities, including hospitals and landfills, have sufficient capacity to accommodate both construction and operation of the new 500 kV circuit.

Construction within the existing ROW would result in the collocation of new structures and power lines adjacent to and across existing utility lines. The likelihood of a collocation accident is low because the presence of multiple transmission lines in a single corridor is common and because coordination with the owners and operators of the existing transmission line would occur prior to construction of the new 500 kV circuit. In addition, underground utilities including natural gas pipelines could be disrupted during ground disturbance associated with construction of this alternative. Compliance with California Government Code requirements for identification of subsurface utilities would address impacts to utilities below ground.

D.17.6 Mitigation Monitoring, Compliance, and Reporting

Table D.17-8 presents the mitigation monitoring, compliance, and reporting actions for utilities and public services.

Table D.17-8. Mitigation Monitoring Program – Utilities and Public Services

MITIGATION MEASURE	**UPS-1a: Use non-potable water for construction purposes.** Project water supply for dust control, soil compaction activities, and site restoration/revegetation shall be obtained from non-potable sources, as feasible, and ensured in a water contract through a local water agency or district. The Applicant shall provide a letter describing the availability of non-potable water and efforts made to obtain it for use during construction to the CPUC and BLM a minimum of 60 days prior to the start of construction.
Location	Throughout project area.
Monitoring / Reporting Action	CPUC/BLM monitor verifies receipt of letter describing availability of non-potable water for project use.
Effectiveness Criteria	Non-potable water is used to the extent it is available, reducing need for potable water for dust control.
Responsible Agency	CPUC/BLM
Timing	At least 60 days prior to construction.
MITIGATION MEASURE	**UPS-2a: Protect pipelines and overhead and underground utilities.** Prior to commencing construction, SCE shall perform engineering studies to determine whether and what cathodic protection would be required on pipelines potentially affected. SCE shall submit to the CPUC and BLM written documentation of the following: ▪ Evidence of coordination with all pipeline and utility owners with facilities in the vicinity of planned construction, including their review of SCE's construction plans and a description of any protective measures or compensation to be implemented to protect affected facilities; ▪ Copy of the Applicant's database of emergency contacts for pipelines and utilities that may be in close proximity or require monitoring during construction of the project; and ▪ Evidence that the project meets all applicable local requirements.
Location	Throughout project area.
Monitoring / Reporting Action	CPUC/BLM monitor verifies receipt of information required and its sufficiency
Effectiveness Criteria	No damage to utilities or interruption of service occur
Responsible Agency	CPUC/BLM
Timing	At least 30 days prior to construction.

D.17.7 References

CalRecycle. 2015. Solid Waste Information System – Facility/Site Listing. [online]: http://www.calrecycle.ca.gov/SWFacilities/Directory/SearchList/List?COUNTY=Riverside&FAC=Disposal&OPSTATUS=Active. Accessed February 20, 2015.

CPUC (California Public Utilities Commission). 2007. SCE El Casco System Project Draft EIR, individual resource Sections. http://www.cpuc.ca.gov/environment/info/aspen/elcasco/toc-deir.htm. Accessed April 15, 2015.

CPUC and BLM. 2006. SCE Devers–Palo Verde 500 kV No. 2 Project EIR/EIS, Sections on West of Devers Alternative. http://www.cpuc.ca.gov/environment/info/aspen/dpv2/toc-deir.htm. Accessed April 15, 2015

CPUC and USDA (United States Department of Agriculture) Forest Service. 1984. Devers-Valley 500 kV, Serrano-Valley 500 kV and Serrano–Villa Park 220 kV Transmission Line Project Final EIS/EIR. August.

Riverside (County of Riverside). 2006. Ordinance No. 659, (As Amended Through 659.7): An Ordinance of the County of Riverside Amending Ordinance 659 and Chapter 4.60 of the Riverside County Code Establishing Development Impact Fees. Amended September 12, 2006

SCE (Southern California Edison). 2013. Proponent's Environmental Assessment for the West of Devers Upgrade Project. Application A.13-10-020. October 25, 2013.

D.18 Visual Resources

This section includes descriptions of the affected environment for Visual Resources in Section D.18.1 and presents the relevant regulations, plans, and standards in Section D.18.2. Sections D.18.3 through D.18.5 describe the impacts of the Proposed Project and the alternatives. Section D.18.5 presents the mitigation measures and mitigation monitoring requirements, and Section D.18.7 lists references cited. Additional supporting tables and documentation are provided in Visual Resources Appendix 10.

Visual resources refer to visual considerations in the physical environment. Visual resources analysis is a systematic process to logically assess visible change in the physical environment and the anticipated viewer response to that change. Landforms, water, and vegetation patterns are among the natural landscape features that define an area's visual character, whereas buildings, roads, and other structures reflect human modifications to the landscape. These natural and built landscape features are considered visual resources that contribute to the public's experience and appreciation of the environment.

This Visual Resources section describes the existing landscape character and visual quality of the Proposed Project study area, existing views of the Proposed Project from various on-the-ground vantage points, the visual characteristics of the Proposed Project, and the landscape changes that would be associated with the construction and operation of the Proposed Project as seen from various vantage points. For the purposes of this analysis, the Proposed Project study area is defined as the areas and locations from which a Proposed Project (and any alternatives) could be seen, also referred to as the project viewshed, which is discussed in greater detail in Section D.18.1.1 below.

D.18.1 Environmental Setting / Affected Environment

This section describes the existing visual resources in the Proposed Project study area. The Proposed Project would be located within portions of 11 incorporated cities (or spheres of influence), Riverside and San Bernardino Counties, reservation trust land of the Morongo Band of Mission Indians (Morongo Tribal Lands), and land managed by the United States Department of the Interior Bureau of Land Management (BLM).

D.18.1.1 Approach to Data Collection and Regional Setting

D.18.1.1.1 Approach to Data Collection

The Visual Resources technical approach incorporated both a regional perspective and site-specific, detailed landscape assessments. The regional perspective included a general description of the type of landscapes through which the Proposed Project would pass, an assessment of the Proposed Project viewshed based on digital terrain modeling, and linear viewpoint analyses (general visibility assessments) for key roadways in the Proposed Project study area. More detailed visual assessments of the Proposed Project were conducted from specific locations that were selected to represent key viewing populations and viewing circumstances. The assessment approach for these more detailed Key Observation Point (KOP) analyses was differentiated according to: (1) non-federal public and private lands and (2) federal lands managed by the BLM (see Table D.18-1). The technical approach used for views from non-federal public and private lands utilized the **Visual Sensitivity–Visual Change (VS-VC) System.** The technical approach for the portion of the Proposed Project where lands are managed by the BLM was based on the **BLM's Visual Resource Management (VRM) System.** This is a system that BLM requires for use on BLM-managed lands and is generally not applied to non-BLM-managed lands where the BLM has no visual resource management authority or established landscape management objectives.

Table D.18-1. Visual Resources Approach

Land Category	Visual Sensitivity–Visual Change (VS-VC) Methodology	BLM Visual Resource Management (VRM) Methodology
Federal Lands Managed by BLM		×
Non-federal Public Lands	×	
Private Lands	×	
Reservation Trust Land of the Morongo Band of Mission Indians	×	

It is important to note that only approximately 1 mile of the Proposed Project is located on BLM-managed land in the wind energy development area between Haugen-Lehmann Way to the west and Whitewater Canyon to the east. None of the KOPs selected for detailed analysis are located on the one-mile segment of BLM-managed land crossed by the Proposed Project, and this area of BLM-managed land is not visible from any of the selected KOPs. Therefore, the KOP analyses rely on the VS-VC System of analysis, but the one-mile segment of BLM-managed land will be discussed separately per the BLM's VRM System as directed by BLM staff. Although the two methodologies share similarities (each compares anticipated changes, which would occur as a result of a project, to existing sensitivity), there are differences in both approach and terminology. The two methods are described in greater detail in the following sections.

Key Observation Points (KOPs)

A number of representative KOPs were established to assess the various factors that are considered in the evaluation of a landscape's existing visual resources. KOPs were generally selected to be representative of the most critical locations from which the Proposed Project would be seen. KOPs were located based on their usefulness in evaluating existing landscapes and potential impacts on visual resources with various levels of sensitivity, in different landscape types and terrain, and from various vantage points. Typical KOP locations for the Proposed Project included those:

1. Along major or significant travel corridors or points of visual access,
2. At vista points,
3. At significant recreation areas,
4. In residential areas, and
5. At locations that provide good examples of the existing landscape context and viewing conditions.

At each KOP, the existing landscape was characterized per the applicable method and photographed. Photographs were presented as 11" x 17" color images at "life-size scale" when viewed at a standard reading/viewing distance of 18 inches (i.e., when the image is held at a distance of 18 inches from the eye, all landscape features in the images would appear to be the same scale [size] as they would appear in the field at the viewpoint location).

Visual Sensitivity-Visual Change (VS-VC) Methodology

Under this methodology, the Proposed Project was viewed from various public roads and vantage points to develop an overall assessment of the existing landscape character, visual quality, and viewing conditions. Then, at representative KOPs, the existing landscape was characterized (for visual quality, viewer concern, and viewer exposure) and photographed. Each of the factors considered in the evaluation of the existing landscape under the VS-VC methodology is discussed below.

Visual Quality is a measure of the overall impression or appeal of an area as determined by particular landscape characteristics such as landforms, rockforms, water features, and vegetation patterns, as well as associated public values. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to visual quality classifications of indistinctive (Low), common (Moderate), and distinctive (High). Visual quality is studied as a point of reference to assess whether a given project would appear compatible with the established features of the setting or would contrast noticeably and unfavorably with them.

Viewer Concern addresses the level of interest or concern of viewers regarding an area's visual resources (rated from Low to High) and is closely associated with viewers' expectations for the area. Viewer concern reflects the importance placed on a given landscape based on the human perceptions of the intrinsic beauty of the existing landforms, rockforms, water features, vegetation patterns, and even cultural features.

Viewer Exposure describes the degree to which viewers are exposed to views of the landscape (rated from Low to High). Viewer exposure considers landscape visibility (the ability to see the landscape), distance zones (proximity of viewers to the subject landscape), number of viewers (Low to High), and the duration of view (Brief to Extended). Landscape visibility can be a function of several interconnected considerations including proximity to viewing point, degree of discernible detail, seasonal variations (snow, fog, and haze can obscure landscapes), time of day, and/or presence or absence of screening features such as landforms, vegetation, and/or built structures. Even though a landscape may have highly scenic qualities, it may be remote, receiving relatively few visitors and thus, have a lower degree of viewer exposure. Conversely, a subject landscape or project may be situated in relatively close proximity to a major road or highway utilized by a substantial number of motorists and yet still result in relatively low viewer exposure if the rate of travel speed on the roadway is high and viewing times are brief, or if the landscape is partially screened by vegetation or other features. Often, it is the subject area's proximity to viewers, or distance zone, that is of particular importance in determining viewer exposure. Landscapes are generally subdivided into three or four distance zones based on relative visibility from travel routes or observation points. Distance zones typically include Foreground, Middleground, and Background. The actual number of zones and distance assigned to each zone is dependent on the existing terrain characteristics and public policy and is often determined on a project-by-project basis.

Overall Visual Sensitivity is a concluding assessment as to an existing landscape's susceptibility to an adverse visual outcome (rated from Low to High). A landscape with a high degree of visual sensitivity is able to accommodate only a low degree of adverse visual change without resulting in a significant visual impact. A landscape with a low degree of visual sensitivity is able to accommodate a higher degree of adverse visual change before exhibiting a significant visual impact. Overall visual sensitivity is derived from a comparison of existing visual quality, viewer concern, and viewer exposure.

BLM Visual Resource Management (VRM) Approach

Public lands to be occupied by the Proposed Project and managed by the BLM are subject to visual resource management objectives as developed using the BLM VRM System (BLM, 1984; BLM, 1986a and 1986b) and presented in the Resource Management Plan for a given unit. The VRM system identifies four classes (I through IV) with specific management prescriptions for each class. The system is based on an assessment of scenic quality, viewer sensitivity, and viewing distance zones.

Scenic Quality is a measure of the overall impression or appeal of an area created by the physical features of the landscape, such as natural features (landforms, vegetation, water, color, adjacent scenery, and scarcity) and built features (roads, buildings, railroads, agricultural patterns, and utility lines). These features create the distinguishable form, line, color, and texture of the landscape composition that can be judged for scenic quality using criteria such as distinctiveness, contrast, variety, harmony, and balance.

Table D.18-2 presents the VRM scenic quality rating components that are evaluated to arrive at one of three scenic quality ratings (A, B, or C) for a given landscape. Each landscape component is scored, and a score of 19 or higher results in a Class A scenic quality rating. A score of 12 to 18 results in a Class B scenic quality rating, while a score of 11 or less results in a Class C scenic quality rating. The three scenic quality classes are described as follows:

- **Scenic Quality Class A** – Landscapes that combine the most outstanding characteristics of the region.
- **Scenic Quality Class B** – Landscapes that exhibit a combination of outstanding and common features.
- **Scenic Quality Class C** – Landscapes that have features that are common to the region.

Table D.18-2. Visual Resource Management (VRM) Scenic Quality Rating

Component	Scenic Quality Rating		
Landform	High vertical relief (prominent cliffs, spires, or massive rock outcrops); severe surface variation; highly eroded formations (major badlands or dune systems); detail features dominant and exceptionally striking/ intriguing. 5	Steep canyons, mesas, buttes, cinder cones, and drumlins; interesting erosional patterns or variety in size and shape of landforms; or detail features, which are interesting though not dominant or exceptional. 3	Low rolling hills, foothills, or flat valley bottoms or few or no interesting landscape features. 1
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns. 5	Some variety of vegetation but only one or two major types. 3	Little or no variety or contrast in vegetation. 1
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. 5	Flowing, or still, but not dominant in the landscape. 3	Absent or present but not noticeable. 0
Color	Rich color combinations; variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water, or snowfields. 5	Some intensity or variety in colors and contrast of the soil, rock, and vegetation but not a dominant scenic element. 3	Subtle color variations, contrast, or interest; generally muted tones. 1
Influence of Adjacent Scenery	Adjacent scenery greatly enhances visual quality. 5	Adjacent scenery moderately enhances overall visual quality. 3	Adjacent scenery has little or no influence on overall visual quality. 0
Scarcity	One of a kind, unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. 5+*	Distinctive, though somewhat similar to others within the region. 3	Interesting within its setting but fairly common within the region. 1
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony. 2	Modifications add little or no visual variety to the area and introduce no discordant elements. 0	Modifications add variety but are very discordant and promote strong disharmony. –4
Scenic Quality Rating:	A = 19 or more	B = 12 to 18	C = 11 or less

*A rating of greater than 5 can be given but must be supported by written justification

Viewer Sensitivity is a factor used to represent the value of the visual landscape to the viewing public, including the extent to which the landscape is viewed. For example, a landscape may have high scenic qualities but be remotely located and, therefore, seldom viewed. Sensitivity considers such factors as visual access (including duration and frequency of view), type and amount of use (See Table D.18-3), public interest, adjacent land uses, and whether the landscape is part of a special area (e.g., California Desert Conservation Area [CDCA]).

Table D.18-3. Amount of Use Classifications

Type Area	High	Moderate	Low
Roads & highways	More than 45,000 visits/year	5,000 to 45,000 visits/year	Less than 5,000 visits/year
Rivers & trails	More than 20,000 visits/year	2,000-20,000 visits/year	Less than 2,000 visits/year
Recreation sites	More than 10,000 visitor-days/year	2,000-10,000 visitor-days/year	Less than 2,000 visitor-days/year

The three levels of viewer sensitivity can generally be defined as follows:

- **High Sensitivity.** Areas that are either designated for scenic resources protection or receive a high degree of use (includes areas visible from roads and highways receiving more than 45,000 visits [vehicles] per year). Typically within the foreground/middleground (f/m) viewing distance (see Table D.18-4).
- **Medium Sensitivity.** Areas lacking specific, or designated, scenic resources protection but are located in sufficiently close proximity to be within the viewshed of the protected area. Includes areas that are visible from roads and highways receiving 5,000 to 45,000 visits (vehicles) per year. Typically within the background (b) viewing distance (see Table D.18-4).
- **Low Sensitivity.** Areas that are remote from populated areas, major roadways, and protected areas or are severely degraded visually. Includes areas that are visible from roads and highways receiving less than 5,000 visits (vehicles) per year.

Viewing Distance Zones. Landscapes are generally subdivided into three distance zones based on relative visibility from travel routes or observation points (see Table D.18-4). The f/m zone includes areas that are less than 3 to 5e miles from the viewing location. The **f/m** zone defines the area in which landscape details transition from readily perceived to outlines and patterns. The **b** zone is generally greater than five but less than 15 miles from the viewing location. The **b** zone includes areas where landforms are the most dominant element in the landscape, and color and texture become subordinate. In order to be included within this distance zone, vegetation should be visible at least as patterns of light and dark. The seldom-seen **(s/s)** zone includes areas that are usually hidden from view as a result of topographic or vegetative screening or atmospheric conditions. In some cases, atmospheric and lighting conditions can reduce visibility and shorten the distances normally covered by each zone (BLM, 1986b).

Table D.18-4. Distance Zones

f/m – foreground/middleground	0 to 3–5 miles
b – background	5–15 miles
s/s – seldom seen	seldom seen areas

The Visual Resource Management class for a given area is typically arrived at through the use of a classification matrix similar to that presented in Table D.18-5. By comparing the scenic quality, visual sensitivity, and distance zone, the specific VRM class can be determined. The exception to this process is the Class I designation, which is placed on special areas where management activities are restricted (e.g., wilderness areas).

Table D.18-5. Visual Resource Management (VRM) Classification Matrix

Visual Sensitivity Levels		High			Medium			Low
Special Areas		I	I	I	I	I	I	I
Scenic Quality	A	II	II	II	II	II	II	II
	B	II	III	III* IV*	III	IV	IV	IV
	C	III	IV	IV	IV	IV	IV	IV
Distance Zones		f/m	b	s/s	f/m	b	s/s	s/s

*If adjacent areas are Class III or lower, assign Class III; if higher, assign Class IV.

The objectives of each VRM classification as stated in the BLM VRM *Visual Resource Inventory Manual* are as follows:

- **VRM Class I.** The objective is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- **VRM Class II.** The objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **VRM Class III.** The objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate or lower. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- **VRM Class IV.** The objective is to provide for management activities, which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements in the predominant natural features of the characteristic landscape.

The easternmost segment of the Proposed Project (Segment 6) is located within the CDCA, and the easternmost portion of Segment 6 is located within the CDCA Coachella Valley Planning Area south of Desert Hot Springs and north of Palm Springs. VRM classes have previously been established for BLM-managed land crossed by the Proposed Project. A small portion (approximately 1 mile) of Segment 6 between Haugen-Lehmann Way and Whitewater Canyon Road is designated VRM Class II. An adjacent, but smaller, area not crossed by the Proposed Project is designated as Class IV. For the purpose of this analysis, the more restrictive class (Class II) has been applied to Segment 6 BLM-managed land.

D.18.1.1.2 Regional Setting

The Proposed Project would be located largely within portions of the San Bernardino Valley in the west and the San Gorgonio Pass in the east. The San Bernardino Valley region is bounded by the San Gabriel Mountains and the San Bernardino Mountains to the north, by the San Jacinto Mountains to the east, and by the Santa Ana Mountains and Pomona Valley on the south and west. The San Gorgonio Pass is a gap between the San Bernardino Mountains to the north and the San Jacinto Mountains to the south. The terrain of the Proposed Project study area varies from flat to gently sloping plains to steep ridges and drainages in the foothills. Elevations along the Proposed Project range from approximately 1,050 to 3,000 feet above mean sea level with both relatively flat urban areas and mountainous topography.

The Proposed Project study area transitions from the more urbanized and rapidly developing sections of Riverside and San Bernardino Counties dominated by mixed use developments of residential, commercial, and industrial uses, to semi-arid, rolling terrain at the base of the east-west trending San Jacinto and San Bernardino Mountains into a desert basin environment bordered by rough, rocky mountain ranges with jagged ridgelines. Vegetation throughout the Proposed Project study area consists of grassland, chaparral, desert scrub, coastal sage scrub, coast live oak woodland, riparian woodland, alluvial scrub, agricultural land, and disturbed areas (SCE-PEA Oct. 2013, p. 4.4-2).

The Proposed Project would pass through portions of: the cities of Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Palm Springs (i.e., the Potential Future Sphere of Influence Expansion Area), Rancho Cucamonga, Redlands, San Bernardino, and Yucaipa; unincorporated areas of Riverside and San Bernardino Counties; reservation trust land; and BLM-managed land. The Proposed Project would be located largely within an existing utility corridor containing multiple transmission lines.

D.18.1.1.3 Project Viewshed

A project viewshed is defined as the areas and locations from which a proposed project (and any alternatives) could be seen (also called project study area). The San Bernardino and San Gorgonio Mountains to the north and the San Jacinto Mountains to the south of the Proposed Project limit the Proposed Project viewshed to the north and south as does more localized topography such as the hills and ridges that define San Timoteo Canyon. Figures D.18-1 through D.18-6 present maps of the Proposed Project viewshed by segment.

The primary viewing populations of the Proposed Project are travelers on major roadways in the Proposed Project study area (e.g. Interstate [I-] 10, State Route [SR] 62, and San Timoteo Canyon Road) and residents that live in the immediate vicinity of the Proposed Project right-of-way (ROW).

Given the Proposed Project's frequent location along foothills and ridges or on flat plains throughout much of its route, most views of it are either at grade or from inferior (lower elevation) positions, which result in the skylining (extending above the horizon) of some structures from some viewing locations.

The duration of views depends on the viewing population. Stationary viewing populations (such as those in residences or recreation facilities) have more time to view the Proposed Project. Fast-moving viewing populations (such as motorists on nearby roadways) have less time to view the Proposed Project, but the openness of much of the landscape can still afford extended view durations even for freeway (I-10) travelers.

As discussed below in Section D.18.2.2, SR 62 and SR 243 are Officially Designated State Scenic Highways. SR 111 is an Eligible State Scenic Highway. Also, San Timoteo Canyon Road, Beaumont Avenue (north to the San Bernardino County Line), and Whitewater Canyon Road are County Eligible Scenic Highways. All of these roadways have views of portions of the Proposed Project. As discussed elsewhere in this document, traffic volumes are heavy on I-10, SR 62, and SR 111; moderate on San Timoteo Canyon Road and Beaumont Avenue; and light on Whitewater Canyon Road in the Proposed Project study area.

D.18.1.1.4 Linear Viewpoint Analysis

In contrast to stationary views at specific KOPs, which are discussed later in this section, transient views from roadways are variable and can range from unobstructed to completely screened (typically by roadside vegetation or structures). Figures D.18-7A through D.18-7C present linear viewpoint analyses of the Proposed Project from three roadways in the Proposed Project study area including I-10, SR 62, and

San Timoteo Canyon Road. As shown in the three figures, roadway segments are color-coded to indicate the available views of the Proposed Project and include views up to 90 degrees off the direction of travel. Project visibility is not considered when the angle of view exceeds 90 degrees off the direction of travel. The limits of the color-coding indicate the point in that particular direction of travel where the Proposed Project would first become reasonably visible in the greater field of view, though it may still not be noticeable. These results are based on actual field verification of travel views and distances and not on the more theoretical digital terrain analysis that does not take into account screening by structures and vegetation. As illustrated in the figures, there are four view categories that pertain to the Proposed Project and include road segments where:

1. The project would not be visible;
2. The project would be visible but not noticeable;
3. The project would be noticeable but not prominent; and
4. The project would be prominent but not dominant.

A fifth category, *the project would be visibly dominant*, does not occur with respect to the Proposed Project. It should be remembered that what is being considered here is the incremental difference between what is presently within the ROW and what will be within the ROW upon Proposed Project implementation. Tables D.18-6 through D.18-8 quantify the four viewing categories for each roadway and each direction of travel, as well as for both directions of travel combined. What is clear from the figures and tables is that the Proposed Project would have a relatively limited impact on views from these key roadways, with I-10 being the least impacted and San Timoteo Canyon Road being the most impacted. The following paragraphs briefly describe the key findings of the linear viewpoint analyses.

Interstate 10. The linear viewpoint analysis covered I-10 from its intersection with I-15 in the west (Segment 1) to just east of SR 62 in the east (see Figures D.18-7A and 7B). As shown on Figure D.18-7A, this includes a substantial stretch of freeway between Redlands and Calimesa where the Proposed Project would be screened from view by intervening terrain. It is clear from Table D.18-6 that the Proposed Project would have a very limited effect on views from I-10 with the Proposed Project being either not visible, or visible but not noticeable, for approximately 80 percent of the combined (eastbound-westbound) travel distance of slightly over 90 miles. The Proposed Project would be prominently visible from I-10 for only five percent of the combined travel distance, and at no point would the Proposed Project appear to be a dominant visual feature when viewed from I-10.

Table D.18-6. Interstate 10 Linear Viewpoint Analysis[1]

Travel Direction and Category of Visibility	Affected Travel Distance (miles)	Percent of Total Affected Travel Distance	View Duration[2] (minutes)
Eastbound I-10			
1. Not visible	21.82	49%	19.4
2. Visible but not noticeable	13.62	31%	12.1
3. Noticeable but not prominent	6.69	15%	5.9
4. Prominent but not dominant	2.27	5%	2.0
Eastbound Subtotal	44.40	100%	39.4
Westbound I-10			
1. Not visible	25.41	55%	22.6
2. Visible but not noticeable	12.80	28%	11.4
3. Noticeable but not prominent	5.70	12%	5.1
4. Prominent but not dominant	2.09	5%	1.8
Westbound Subtotal	46.00	100%	40.9

Table D.18-6. Interstate 10 Linear Viewpoint Analysis[1]

Travel Direction and Category of Visibility	Affected Travel Distance (miles)	Percent of Total Affected Travel Distance	View Duration[2] (minutes)
Total Both Directions			
1. Not visible	47.23	52%	42.0
2. Visible but not noticeable	26.42	29%	23.5
3. Noticeable but not prominent	12.39	14%	11.0
4. Prominent but not dominant	4.36	5%	3.8
Total for Both Directions	90.40	100%	80.3

1 - See Figures D.18-7A and 7B for Linear Viewpoint Maps of I-10
2 - Based on posted travel speed.

State Route 62. The linear viewpoint analysis included SR 62, an Officially Designated State Scenic Highway, from its intersection with I-10, north for approximately 3 miles to the point where the Proposed Project first becomes visible, though not noticeable, to southbound travelers (see Figure D.18-7B). As shown in Table D.18-7, the Proposed Project would be prominently visible to northbound travelers as the transmission line spans the highway. However, the distance of visibility is very brief because the span is only approximately 1.25 miles north of the I-10 interchange. Overall, the Proposed Project would have a limited effect on views from SR 62 with the Proposed Project being either not visible, or visible but not noticeable, for 60 percent of the combined (northbound-southbound) travel distance of approximately 4 miles and prominently visible for 23 percent of the combined travel distance as travelers approach the span. At no point would the Proposed Project appear to be a dominant visual feature given the presence of existing energy infrastructure and dominance of Mount San Jacinto (when traveling southbound).

Table D.18-7. SR 62 Linear Viewpoint Analysis[1]

Travel Direction and Category of Visibility	Affected Travel Distance (miles)	Percent of Total Affected Travel Distance	View Duration[2] (minutes)
Northbound SR 62			
1. Not visible	0.22	20%	0.20
2. Visible but not noticeable	0	0%	0
3. Noticeable but not prominent	0.35	32%	0.32
4. Prominent but not dominant	0.52	48%	0.48
Northbound Subtotal	1.09	100%	1.00
Southbound SR 62			
1. Not visible	0.97	34%	0.90
2. Visible but not noticeable	1.19	42%	1.10
3. Noticeable but not prominent	0.33	11%	0.30
4. Prominent but not dominant	0.37	13%	0.34
Southbound Subtotal	2.86	100%	2.64
Total Both Directions			
1. Not visible	1.19	30%	1.10
2. Visible but not noticeable	1.19	30%	1.10
3. Noticeable but not prominent	0.68	17%	0.63
4. Prominent but not dominant	0.89	23%	0.82
Total for Both Directions	3.95	100%	3.65

1 - See Figure D.18-7B for a Linear Viewpoint Map of SR 62
2 - Based on posted travel speed

San Timoteo Canyon Road. The linear viewpoint analysis addressed the full extent of San Timoteo Canyon Road (see Figure D.18-7C) from its intersection with Barton Road in the north to its southern terminus with Oak Valley Parkway, a linear distance of almost 11.5 miles (northbound travel direction). As shown in Table D.18-8, the Proposed Project would be either not visible (due to screening by terrain and roadside vegetation) or visible but not noticeable for approximately 46 percent of the combined (northbound-southbound) travel distance of slightly more than 22.6 miles. However, given the Proposed Project's relatively close proximity to San Timoteo Canyon Road and frequent superior (elevated) location along the southern ridgeline, the Proposed Project would be prominently visible for 43 percent of the combined travel distance, consistent with the visibility of the current energy transmission infrastructure. However, at no point would the Proposed Project appear to be a dominant visual feature.

Table D.18-8. San Timoteo Canyon Road Linear Viewpoint Analysis*

Travel Direction and Category of Visibility	Affected Travel Distance (miles)	Percent of Total Affected Travel Distance	View Duration[2] (minutes)
Northbound San Timoteo Canyon Road			
1. Not visible	3.35	29%	4.02
2. Visible but not noticeable	2.74	24%	3.29
3. Noticeable but not prominent	1.33	12%	1.60
4. Prominent but not dominant	4.03	35%	4.83
Northbound Subtotal	11.45	100%	13.74
Southbound San Timoteo Canyon Road			
1. Not visible	2.85	25%	3.42
2. Visible but not noticeable	1.64	15%	1.97
3. Noticeable but not prominent	1.10	10%	1.32
4. Prominent but not dominant	5.60	50%	6.72
Southbound Subtotal	11.19	100%	13.43
Total Both Directions			
1. Not visible	6.20	27%	7.44
2. Visible but not noticeable	4.38	19%	5.25
3. Noticeable but not prominent	2.43	11%	2.92
4. Prominent but not dominant	9.63	43%	11.56
Total for Both Directions	22.64	100%	27.17

1 - See Figure D.18-7C for a Linear Viewpoint Map of San Timoteo Canyon Road
2 - Based on posted travel speed

D.18.1.2 Environmental Setting by Segment

The visual resources setting for the Proposed Project study area is described below in seven sections: San Bernardino (Segment 1), Colton and Loma Linda (Segment 2), San Timoteo Canyon (Segment 3), Beaumont and Banning (Segment 4), Morongo Tribal Lands and surrounding areas (Segment 5), Whitewater and Devers (Segment 6), and Subtransmission (adjacent to Segment 1). Detailed visual analyses were conducted at representative KOPs within each segment and are discussed below and summarized in Table 10-1 in Appendix 10.

D.18.1.2.1 Segment 1: San Bernardino

This segment of the Proposed Project extends from the San Bernardino Substation south through the cities of Redlands and Loma Linda before terminating at San Bernardino Junction. The transmission line corridor along this segment contains three or four transmission lines depending on location. The landscape along this segment is suburban in character with numerous residential developments, parks, and commercial developments in close proximity to the corridor.

Views of the Proposed Project along this segment would be available from local roads paralleling and crossing under the corridor, residential neighborhoods adjacent to the transmission line corridor, parks within the corridor ROW, and I-10 where the transmission lines span the freeway.

KOP 1 – Right-of-Way Crossing of Mission Road in Loma Linda

Figure D.18-8A presents the view to the south from Mission Road, down the ROW park that has been developed under the transmission lines, in the City of Loma Linda. The view encompasses that portion of Segment 1 heading south from Mission Road, toward San Bernardino Junction, just beyond the first ridgeline at the far left of the image. The image captures the orchard/park setting within this portion of the ROW, the residential developments that back on to the ROW, and the hills that provide a backdrop to the south.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of a suburban electric utility corridor with substantial industrial character but hosting some orchard trees and developed park landscaping within the ROW. Suburban residential areas border both sides of the ROW. Vegetation within, and adjacent to, the corridor provides visual interest and color contrast, but the corridor is dominated by the larger, complex, industrial forms of the transmission structures.

Viewer Concern. High. Although energy transmission infrastructure dominates the foreground views from the park within the corridor, from adjacent residential neighborhoods, and from roads that are spanned by the ROW and adjacent to the park, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridgelines) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from the park within the corridor, from adjacent residential neighborhoods, and from roads that are spanned by the ROW and adjacent to the park. The number of viewers would be Moderate, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1, combining the equally weighted Low to Moderate visual quality, High viewer concern, and High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

Segment 1 Night Lighting

General. North of I-10, the night lighting landscape along Segment 1 is fairly typical of an urban environment primarily due to commercial lighting, exterior security lighting on business and warehouse sites, traffic signal lights, and street lighting. There are also numerous vehicle lights, particularly along major roadways and on I-10 with its high traffic volume. South of I-10, as the Proposed Project passes through the residential areas between Redlands Boulevard to the north and Beaumont Avenue to the south, there is less lighting, as would be anticipated, that includes some street lighting, residential lighting, and very limited areas of lighting in the occasional ROW park areas. Past Beaumont Avenue, as the route ascends the ridge to San Bernardino Junction and the intersection with Segments 2 and 3, there is no lighting.

Federal Aviation Administration (FAA) Hazard Lighting. There are no FAA hazard lights within the Segment 1 ROW, including the span of I-10. There are also no existing FAA lights in the vicinity of the Segment 1 ROW with the exception of the lights on the stacks of the Mountainview Power Plant, located immediately northwest of San Bernardino Substation, at the northern terminus of Segment 1.

D.18.1.2.2 Segment 2: Colton and Loma Linda

This segment of the Proposed Project extends east from the Vista Substation by spanning I-215, then passing through the cities of Grand Terrace, Colton, and Loma Linda to the San Bernardino Junction. Vista Substation is a visually complex facility serving numerous transmission lines and exhibiting substantial industrial character. The transmission line corridor along this segment contains several lattice structure transmission lines. The landscape along this segment transitions from a typical suburban landscape with a mix of newer and older residential neighborhoods in Grand Terrace and Colton to the undeveloped, rolling, grass-covered hills of southern Loma Linda. Views of the Proposed Project along this route segment would be available from local roads paralleling and crossing under the corridor, and residential neighborhoods adjacent to the transmission line corridor.

KOP 2 – Canyon Vista Drive in Colton

Figure D.18-9A presents a life-size scale view to the west toward the existing transmission lines along the ridgeline south of the residential development, from Canyon Vista Drive, just west of East Chase Canyon Lane, in the City of Colton. The view encompasses a residential neighborhood and a portion of Segment 2 between San Bernardino Junction and the Vista Substation. Three transmission lines are positioned along the ridgeline south of the subdivision. The northernmost line (second and fifth structures from the left in the image) is to be replaced with the Proposed Project.

Visual Quality. Moderate. The foreground residential landscape consists of newer, two-story, single-family residences with some established trees, which provide interesting color contrasts with the red-tiled roofs. The view is backdropped by grass-covered, rolling hills and ridgelines with monotone tan grasses, punctuated by prominent, structurally complex, lattice transmission structures that exhibit substantial skylining (extending above the horizon).

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground views from the residential neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the residential neighborhood. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 2 and surrounding neighborhood, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

Segment 2 Night Lighting

General. There is no night lighting within any portion of Segment 2 along the hills and ridges traversed by the ROW. Night lighting in the vicinity of Segment 2 is primarily limited to suburban residential lighting that borders the ROW and includes some street lights, very limited traffic signal lights, and some vehicle lights, which are most apparent where the route spans I-215.

FAA Hazard Lighting. There are no FAA hazard lights within or in the vicinity of the Segment 2 ROW.

D.18.1.2.3 Segment 3: San Timoteo Canyon

This segment begins at the San Bernardino Junction and passes through San Timoteo Canyon to the El Casco Substation.

The landscape along this segment is predominantly rural residential. Open views of canyon slopes and rolling foothills are available to residents and travelers on San Timoteo Canyon Road. The Proposed Project would parallel existing transmission lines across the canyon's rolling, grass-covered, southern ridgeline.

Views of the Proposed Project along this route segment would be available from San Timoteo Canyon Road, local roads paralleling and crossing under the utility corridor, and from rural residences.

KOP 3 – Pilgrim Road

Figure D.18-10A presents a life-size scale view to the west toward the Proposed Project route from Pilgrim Road, off of San Timoteo Canyon Road in San Timoteo Canyon, in the City of Calimesa. The rural residential view captures portions of three transmission lines that traverse the hills and ridgelines that define the southwest border of the canyon.

Visual Quality. Moderate. The rural residential landscape consists of rolling, grass-covered hills with minimal visual variety and the prominent complex of vertical forms consisting of energy transmission infrastructure. Lattice structures blend effectively with background landforms but become noticeably more conspicuous where structure skylining occurs.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground landscape, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the rural residences. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 3, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 4 – Westbound San Timoteo Canyon Road

Figure D.18-11A presents a life-size scale view to the southwest toward the Proposed Project route, from westbound San Timoteo Canyon Road, approximately 0.7 miles east of Redlands Boulevard. The rural residential view captures portions of the three transmission lines that traverse the hills and ridgelines that define the southwest border of San Timoteo Canyon.

Visual Quality. Moderate. The landscape consists of open, panoramic views of the southern hills and ridgelines that define the southwest boundary of San Timoteo Canyon; these views are available throughout much of the length of San Timoteo Canyon Road. The hills are primarily grass-covered and offer subdued coloration and minimal visual variety but are primarily natural in appearance. The notable exception is the substantial transmission line corridor containing three transmission lines that traverse the hills and ridges.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground landscape, residents and travelers on San Timoteo Canyon Road would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridges) an adverse visual change.

Viewer Exposure. Moderate to High. The project would be highly visible in the foreground views from San Timoteo Canyon Road and nearby residences. The number of viewers would be Low to Moderate, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 4, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

Segment 3 Night Lighting

General. Compared to the surrounding, intensely urban environs, San Timoteo Canyon experiences a relatively dark night sky environment, which imparts a tangible sense of remoteness. There is minimal lighting within the canyon, and night lighting is primarily associated with the relatively few, scattered, rural residences. Also, there is no lighting of any kind within the transmission line corridor. The primary cluster of lighting within San Timoteo Canyon is at El Casco Substation.

FAA Hazard Lighting. There are no FAA hazard lights within or near the Segment 3 ROW, or within San Timoteo Canyon, in general.

D.18.1.2.4 Segment 4: Beaumont and Banning

This portion of the Proposed Project extends from the El Casco Substation through the cities of Calimesa, Beaumont, and Banning and spans I-10. The route travels in an established transmission line corridor, with three existing transmission lines, along the foothills of the San Bernardino Mountains and passes adjacent to numerous existing and new residential developments. The landscape along the majority of this segment is decidedly suburban with well-defined residential developments interspersed with occasional park and recreation facilities and backdropped to the north by the San Bernardino Mountains.

Views of the Proposed Project along this segment would be available from I-10 at the freeway span, local roads paralleling and crossing under the utility corridor, residential areas adjacent to the utility corridor, and park facilities either crossed by, or adjacent to, the existing transmission lines.

KOP 5 – Boros Boulevard – Tukwet Canyon

Figure D.18-12A presents a life-size scale view to the northeast from the intersection of Boros Boulevard and Venturi Avenue, in the Tukwet Canyon residential development, at the eastern end of San Timoteo Canyon. The view encompasses a residential neighborhood and a portion of Segment 4 between the El Casco Substation and I-10. Three transmission lines traverse the ridgelines that define the northern boundary of the Tukwet Canyon residential development.

Visual Quality. Moderate. The foreground landscape is of a new suburban residential landscape of two-story, single-family homes. Prominent (though partially screened) energy transmission infrastructure (structures and conductors) is adjacent to, and to the rear (north) of, the northern perimeter of the development. The landscape generally lacks distinctive features or elements of visual interest.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground of views from the adjacent neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background ridges or sky) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views of residents in the adjacent neighborhood. The number of viewers would be Low to Moderate, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 5, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 6 – Stetson Community Park

Figure D.18-13A presents a life-size scale view to the northwest from the east end of Stetson Community Park, viewing down the park that has been developed within the ROW, in the City of Beaumont. The view encompasses a residential ROW park setting and a portion of Segment 4 just east of I-10. Three transmission lines pass through the residential development.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of a suburban electric utility corridor with substantial industrial character but hosting developed park facilities within the ROW. Suburban residential areas border both sides of the ROW. Vegetation within, and adjacent to, the corridor provides color contrast but is dominated by the larger, complex, industrial forms of the transmission structures.

Viewer Concern. High. Although energy transmission infrastructure dominates the foreground views from the park within the corridor, from adjacent residential neighborhoods, and from roads that are spanned by the ROW and adjacent to the park, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridgelines) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from the park within the corridor, from adjacent residential neighborhoods, and from roads that are spanned by the ROW and adjacent to the park. The number of viewers would be Moderate, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 6, combining the equally weighted Low to Moderate visual quality, High viewer concern, and High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 6A – Sagura Road – Solera Residential Golf Community

Figure D.18-13C presents a life-size scale view to the northwest from Sagura Road in the Solera residential golf community, in the City of Beaumont. The view encompasses a portion of the residential development backing onto the south side of the existing ROW containing three transmission lines of different design and conductor spans that pass through the residential development.

Visual Quality. Low to Moderate. The foreground suburban, residential landscape is of well-maintained, one-story, single-family homes. Prominent (though partially screened) energy transmission infrastructure (towers and conductors) with notable complex industrial form and character is immediately adjacent and to the north of the residences.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground of views from the adjacent neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridgelines to the north) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the adjacent residential neighborhood. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 6A, combining the equally weighted Low to Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 7 – Oak Valley Golf Course

Figure D.18-14A presents a life-size scale view to the east toward the Proposed Project route, from the Solera Oakmont Golf Course Clubhouse in the City of Beaumont. The view encompasses a residential golf community and a portion of Segment 4 north of Oak Valley Parkway and east of I-10. Three transmission lines are prominently visible as they pass through this landscape.

Visual Quality. Moderate. The foreground landscape is of manicured grass and trees designed to provide open views and aesthetic appeal for recreational visitors. Adjacent residential developments are also visible. Prominent in views are the existing electric transmission facilities of various designs, which impart prominent industrial character. Mount San Jacinto is prominently visible in the background and is a landscape feature of visual interest.

Viewer Concern. High. Visitors to the golf course and adjacent residents expect to see a landscape with high aesthetic appeal, characterized by a mosaic of natural and managed vegetative forms. Any additional intrusion of built structures with industrial character or blockage of views from any of the golf course grounds would be seen as an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the golf course and golf course residences. The number of viewers would be Low to Moderate, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 7, combining the equally weighted Low to Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 8 – Stargazer Street and Rose Avenue in The Estates

Figure D.18-15A presents a life-size scale view to the east-southeast toward the Proposed Project route from the intersection of Stargazer Street and Rose Avenue in The Estates subdivision, in the City of Beaumont. The view encompasses a portion of the subdivision backing onto the existing ROW containing three prominently visible transmission lines.

Visual Quality. Moderate. The foreground suburban, residential landscape is of one-story, single-family homes. Prominent (though partially screened) energy transmission infrastructure (towers and conductors) is adjacent, and to the rear of, the southern perimeter of the development. While the landscape generally lacks distinctive features or elements of visual interest, Mount San Jacinto is partially visible in the background, being somewhat obscured from view by residential structures and transmission towers.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground of views from the adjacent neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky and Mt. San Jacinto) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the adjacent residential neighborhood. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 8, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 9 – Cedar Hollow Road in Beaumont

Figure D.18-16A presents a life-size scale view to the southwest from Cedar Hollow Road, just west of Cherry Avenue, toward the Proposed Project in Segment 4 as it passes through the northern residential areas in the City of Beaumont. Three transmission lines are prominently visible in the ROW.

Visual Quality. Low to Moderate. The foreground suburban, residential landscape is of one- and two-story, single-family homes dominated by an adjacent energy transmission corridor. The landscape generally lacks distinctive features or elements of visual interest.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground of views from the adjacent neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the adjacent residential neighborhood. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 9, combining the equally weighted Low to Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

Segment 4 Night Lighting

General. There is very limited night lighting within the ROW throughout Segment 4, and it generally occurs where a local roadway with lighting is spanned by the ROW or where there is a park area developed within the ROW. Night lighting in the immediate vicinity of Segment 4 is primarily limited to the suburban lighting of the various residential developments that back onto the ROW in the cities of Beaumont and Banning. Such lighting consists of residential lighting and occasional street lights and traffic signal lights. One exception is where the ROW corridor passes adjacent to the Nobel Creek Park athletic field complex in Beaumont with its numerous night lights for the baseball fields. However, much of the central portion of Segment 4 passes through very dark, undeveloped areas at the base of the San Bernardino Mountains.

FAA Hazard Lighting. With one exception (a radio tower adjacent to the ROW span of I-10), there is no FAA hazard lighting either within, or in the immediate vicinity of, the Segment 4 ROW. However, there are two FAA hazard lights (one flashing and one static) on communication towers in downtown Banning; four static hazard lights on the light standards at Banning High School south of I-10; and one static hazard light on a 500 kV transmission tower, also south of I-10 and near SR 243 and Banning High School.

D.18.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

Segment 5 crosses Morongo Tribal Lands in San Gorgonio Pass east to Milepost 37 at the eastern boundary of the tribal lands. Throughout this segment, the arid landscape is dominated by the imposing Mount San Jacinto located immediately south of San Gorgonio Pass. Views of the Proposed Project along this route would be available from I-10 and local roads. The Proposed Project would also be visible from the Morongo Community Center, the Outlet Mall at Cabazon, and nearby residences in eastern Banning.

KOP 10 – Bluff Street in Banning

Figure D.18-17A presents a life-size scale view to the southeast toward the Proposed Project at the border of Segments 4 and 5, as the Proposed Project passes through the northern portion of the City of Banning, before extending to the east across Morongo Tribal Lands. The view encompasses the western end of Segment 5 as it spans Bluff Street and passes into Morongo Tribal Lands.

Visual Quality. Moderate. The landscape is semi-arid, rural-to-suburban residential with foreground grass- and shrub-covered hills and ridges with muted hues of tans and yellows with some darker contrasting greens from within residential yards. The background is dominated by Mount San Jacinto. Existing vertical forms of energy infrastructure (lattice and wood-pole structures) with industrial character feature prominently in the landscape, particularly where structure skylining occurs.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground landscape at the base of the hills, travelers on Bluff Street and adjacent residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, hills, and mountains) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the Bluff Street and the adjacent residences. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 10, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 11 – Hathaway Street in Banning

Figure D.18-18A presents a life-size scale view to the northeast toward the Proposed Project across the southwest corner of the Morongo Tribal Lands, from the entrance to the Summit Ridge Apartments on Hathaway Street, in eastern Banning. The view encompasses the ROW as it passes across the corner of the tribal lands, north of I-10, and adjacent to the eastern border of the City of Banning. The San Bernardino Mountains provide a backdrop of visual interest in views to the north and northeast.

Visual Quality. Low to Moderate. The foreground landscape is disturbed and undeveloped, is generally lacking features of visual interest, and exhibits minimal visual variety. Existing utility infrastructure (distantly visible) further compromises views of the background San Bernardino Mountains, which do provide a backdrop of visual interest.

Viewer Concern. High. Although the foreground landscape is disturbed, and existing utility infrastructure is noticeable in views from Hathaway Street, travelers and adjacent residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, hills, and mountains) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from travelers on Hathaway Street and adjacent residences. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 11, combining the equally weighted Low to Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 12 – Morongo Community Center

Figure D.18-19A presents a life-size scale view to the southwest toward the Proposed Project route as it passes south of the Morongo Community Center at 13000 Fields Road, north of I-10. The view encompasses a portion of the community center parking lot and the ROW as it passes between the community center and I-10. The ROW contains three transmission lines, two consisting of lattice-steel structures and one wood-pole H-frame line.

Visual Quality. Low to Moderate. The foreground landscape is dominated by the flat, arid landscape of San Gorgonio Pass with prominent energy transmission infrastructure (towers and conductors), paved parking surfaces, and I-10 immediately to the south. It is backdropped by steeply rising ridges both to the north and south of the pass.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground landscape when viewed from the community center, visitors to the community center would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, and Mount San Jacinto) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the community center. The number of viewers would be Low to Moderate, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 12, combining the equally weighted Low to Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

Segment 5 Night Lighting

General. There is no night lighting within the ROW throughout Segment 5. Night lighting in the vicinity of Segment 5 is primarily limited to the scattered rural residential lighting of the western portion of Segment 5 on Morongo Tribal Lands and the much more substantial lighting that is present in the central to eastern portion of Segment 5 as part of, and in proximity to, the Morongo Casino and Resort and the western portion of San Gorgonio Pass. Lighting sources include residential lights, street lights and signalization, lighting from commercial and retail developments, lighting from the Morongo Casino complex, the outlet retail complex, and the numerous vehicle lights along the I-10 corridor and at the truck scale stop. The casino tower lighting is the most prominent lighting feature in the San Gorgonio Pass.

FAA Hazard Lighting. There is no FAA hazard lighting within the Segment 5 ROW. However, southeast of the Morongo Casino area, there are a number of FAA hazard lights mounted on wind turbines on the south side of I-10 in the Cabazon area. These red flashing lights are quite prominent in the night landscape, even in proximity to the Morongo Casino lighting. Also south of I-10, along the base of the ridgeline that forms the southern boundary of the pass, are several static hazard lights on 500 kV transmission structures.

D.18.1.2.6 Segment 6: Whitewater and Devers

This section of the Proposed Project extends from Milepost 37 at the eastern boundary of the Morongo Tribal Lands east to the Devers Substation. It would pass through the Community of Whitewater first through a neighborhood accessed via Haugen-Lehmann Way. Moving eastward, it would pass through existing wind farm developments before spanning Whitewater Canyon south of another rural residential enclave also known as Bonnie Bell. It would then pass through existing wind farm developments and south of the eastern extent of the Community of Whitewater, accessed via Painted Hills Road, before crossing SR 62 (an Officially Designated State Scenic Highway). Finally, it would pass through more wind farm developments before entering the Devers Substation.

Views of the Proposed Project along this route segment would be available from roads including I-10, SR 62, SR 111 (an Eligible State Scenic Highway), Dillon Road, Painted Hills Road, Whitewater Canyon Road (a County Eligible Scenic Highway), and other local roads. The Proposed Project would also be visible from several residential enclaves comprising the broader Whitewater residential community north of I-10 including those accessed via Haugen-Lehmann Way and Painted Hills Road. Views of the Proposed Project would also be available to travelers on the Pacific Crest National Scenic Trail (PCT) as the trail passes through Whitewater and is spanned by the Proposed Project.

North of I-10, between Haugen-Lehmann Way and Whitewater Canyon Road, the Proposed Project would also cross a small area (less than 1 mile wide) of public land managed by the BLM, most of which is assigned Visual Resource Management (VRM) Class II with a smaller portion assigned VRM Class IV.

KOP 13 – Haugen-Lehmann Way in Central Whitewater

Figure D.18-20A presents a life-size scale view to the west toward the Proposed Project route, from Haugen-Lehmann Way, near the intersection with Amethyst Drive, in the central portion of the residential Community of Whitewater.

Visual Quality. Low to Moderate. The foreground desert landscape is rural residential dominated by the vertical forms of utility poles and electric transmission line structures and backdropped by a low range of rolling hills and angular ridges with muted, earth-toned colors. The view encompasses a portion of Segment 6 as the ROW passes through the central portion of Whitewater, which includes several residential enclaves extending from just east of the Morongo Tribal Lands eastward toward SR 62. The ROW contains three prominently visible transmission lines including one with lattice-steel structures and two with wood-pole structures.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the landscape visible within this community, residential viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, or Mount San Jacinto if viewing to the south) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from the residential community. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 13, combining the equally weighted Low to Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 14 – Pacific Crest Trail (PCT) Trailhead and Parking Lot

Figure D.18-21A presents a life-size scale view to the south toward the Proposed Project route passing through the western portion of the Community of Whitewater, from the PCT trailhead and parking lot north of Haugen-Lehmann Way. From the parking lot, the PCT travels north and south. To the south, the PCT passes through the western portion of the Community of Whitewater (where it would be spanned by the Proposed Project) before crossing under I-10, turning east, and then eventually south toward Mount San Jacinto.

Visual Quality. Moderate to High. The foreground flat desert landscape of low-growing shrubs and grasses of muted earth-tone colors of tans, browns, and greens, is dominated by the massive, angular form of Mount San Jacinto that rises dramatically from the flat, desert floor that comprises the eastern end of San Gorgonio Pass. The view also encompasses the vertical structural forms of a portion of the existing transmission lines passing through the central portion of the Community of Whitewater, which includes several residential enclaves extending from just east of the Morongo Tribal Lands eastward toward SR 62. Also visible are numerous wind turbines along the foot of the ridges (south of I-10) leading to Mount San Gorgonio.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the western San Gorgonio Pass landscape visible from the PCT and parking lot, trail users would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, or Mount San Jacinto) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be moderately visible in the foreground of views from the PCT parking lot but highly visible from the PCT farther south. The number of viewers would be Low, but the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For travelers on the PCT in the vicinity of KOP 14, combining the equally weighted Moderate to High visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

BLM-managed Land Between Haugen-Lehmann Way and Whitewater Canyon

East of Haugen-Lehmann Way and west of Whitewater Canyon is an approximately one-mile segment of BLM-managed land that is crossed by the Proposed Project. The landscape consists primarily of low-growing grasses and shrubs on rocky, alluvial fans, hill slopes, and ridge tops to the north of I-10. Views of this area are primarily limited to the open and unobstructed foreground views from I-10 and the I-10 rest stop, immediately south of the parcel. The smooth to granular and coarse landform exhibits colors of light tans and gray. The low-growing vegetation exhibits primarily subdued hues of tans, yellows, and greens, with an overall matte-textured appearance. Also present in the landscape are the complex structures of multiple transmission lines within the corridor at different elevations and numerous wind turbines along the ridgetops. The complex of industrial forms imparts substantial industrial character to the hill slope landscape north of I-10. The VRM classification assigned to this area is Class II. The VRM Class II Management Objective is:

> *...to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.*

KOP 15 – Whitewater Canyon Road

Figure D.18-22A presents a life-size scale view to the southeast toward the Proposed Project route, at the east rim of Whitewater Canyon, from Whitewater Canyon Road, south of Bonnie Bell (a residential enclave in the Community of Whitewater). The view encompasses a portion of the ROW in Segment 6 as it spans Whitewater Canyon and Whitewater Canyon Road. The ROW contains three transmission lines of different designs and heights, which are noticeably visible on the canyon rim from Whitewater Canyon Road.

Visual Quality. Moderate. The foreground landscape is of a desert river canyon defined by low, canyon walls and the vertical, industrial forms of wind turbines and electric transmission structures, all backdropped by the massive angular form of Mount San Jacinto that rises dramatically from the flat desert floor.

Viewer Concern. High. Travelers on Whitewater Canyon Road, including residents from the nearby residential enclave of Bonnie Bell, would consider any increase in industrial character or built structural prominence in the canyon, or view blockage of the background sky and Mount San Jacinto an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views of travelers on Whitewater Canyon Road and residents in Bonnie Bell. The number of viewers would be Low to Moderate, and the duration of view would be Moderate to Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 15, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 16 – Painted Hills Road in Whitewater

Figure D.18-23A presents a life-size scale view to the south-southeast toward the Proposed Project route at the eastern end of Segment 6, from Painted Hills Road immediately east of Verbena, in the eastern portion of the Community of Whitewater immediately west of SR 62. The view encompasses the eastern portion of the Segment 6 ROW as it passes the easternmost portion of the Community of Whitewater before spanning SR 62 and the continuing east to the Devers Substation just east of SR 62. The ROW contains three transmission lines, although they are somewhat obscured by the complexity of the background wind turbines and adjacent transmission and utility lines.

Visual Quality. Low to Moderate. The foreground to middleground flat, desert landscape consists of grasses and low shrubs of muted tones, dominated by a profusion of energy infrastructure consisting of the predominantly vertical forms of wind turbines, electric transmission line structures, and other utility poles. A background of distant hills and mountains low on the horizon adds visual interest. Mount San Jacinto, to the south (and out of the frame of view in Figure D.18-23A), is the dominant natural feature in the region.

Viewer Concern. High. Residential viewers in this portion of Whitewater would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, and Mount San Jacinto) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views of travelers on Painted Hills Road and adjacent residents. The number of viewers would be Low, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 16, combining the equally weighted Low to Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 17 – Southbound State Route 62

Figure D.18-24A presents a life-size scale view to the southeast toward the Proposed Project span of SR 62, from southbound SR 62, just north of the span. The view encompasses the eastern portion of the Segment 6 ROW as it spans SR 62, an Officially Designated State Scenic Highway, and then continues east to the Devers Substation just east of SR 62. The ROW contains three transmission lines, although they are somewhat obscured by the complexity of the background wind turbines and transmission lines.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of flat, desert landforms dominated by a profusion of energy infrastructure consisting of the predominantly vertical forms of wind turbines and electric transmission line structures. This industrial-appearing landscape is backdropped by Mount San Jacinto, which rises dramatically from the desert floor and adds considerable visual interest.

Viewer Concern. High. SR 62 is an Officially Designated State Scenic Highway and, therefore, warrants a high rating for viewer concern. Although travelers on this stretch of SR 62 would not likely notice the change in conductors and structure configurations that would occur from the Proposed Project, given the existing structural context, any perceived increase in industrial character, structure prominence, or view blockage would be experienced as an adverse visual impact.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views of travelers on SR 62. The number of viewers would be High, and the duration of view would be Moderate to Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 17, combining the equally weighted Low to Moderate visual quality, High viewer concern, and High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

Segment 6 Night Lighting

General. There is no night lighting within the ROW throughout Segment 6. North of I-10, night lighting in the vicinity of Segment 6 is minimal and is primarily associated with the scattered rural residences (and the occasional street light at a road intersection) in the disbursed residential enclaves that make up the greater residential Community of Whitewater, which extends from the Morongo Tribal Lands in the west to SR 62 in the east. Also, aside from a few billboard lights adjacent to I-10, there is minimal night lighting within Whitewater Canyon, which is spanned by Segment 6. There is, however, substantial lighting associated with the numerous vehicles and occasional billboards along the I-10 and SR 62 travel corridors.

FAA Hazard Lighting. There is no FAA hazard lighting within the Segment 6 ROW. However, south of Whitewater Canyon and I-10, in the eastern portion of San Gorgonio Pass, there is a substantial and prominent presence of FAA hazard lights associated with wind turbine developments. From the vicinity of the Bonnie Bell residential enclave, viewing south down Whitewater Canyon, the prominent lighting features are the FAA hazard lights south of I-10. Continuing east, into the western portion of Coachella Valley and in the vicinity of Devers Substation, the synchronized flashing of the FAA hazard lights mounted on the numerous wind turbines becomes the dominant night lighting characteristic of Segment 6 and the surrounding landscape.

D.18.1.2.7 Subtransmission

In addition to the proposed transmission lines, there would be additional subtransmission and distribution facilities associated with the Proposed Project. The two facilities of principal concern with regards to visual effects would be the SB-Redlands-Tennessee and SB-Redlands-Timoteo overhead 66 kV subtransmission lines that would be located east of Segment 1 in an area bounded by W. San Bernardino Avenue on the north, Nevada and Iowa streets on the east, and Barton Road on the south. The area landscape is generally comprised of commercial, office, and light industrial uses, along with diminishing tracts of agricultural land and limited residential development. Views in the commercial, more developed areas tend to be more confined, while views in the less developed (residential and agricultural) areas tend to be more open, with some extended views to the San Bernardino Mountains to the north. KOP 18 was established on Iowa Street for evaluation of the subtransmission facilities.

KOP 18 – Northbound Iowa Street in Redlands

Figure D.18-25A presents a life-size scale view to the north along the Iowa Street, near the southwest corner of the Cottage Lane residential subdivision, south of Orange Avenue and North of Barton Road in the City of Redlands. The view encompasses a portion of the proposed SB-Redlands-Tennessee overhead 66 kV subtransmission line as is passes immediately adjacent and to the west of the Cottage Lane residential subdivision.

Visual Quality. Moderate. The foreground suburban landscape consists of one- and two-story, single-family homes, undeveloped land, and some commercial development. There are no visually prominent or dominant energy or utility facilities in the immediate vicinity of KOP 18, though there are single, wood-pole utility lines along Orange Avenue and a portion of Iowa Street. Also visible are a very few vertical street light poles and a more distant communication tower.

Viewer Concern. High. Travelers on Iowa Street and adjacent residents would consider the introduction of prominent energy infrastructure with its associated industrial character and view blockage of higher value landscape features (background sky and mountains) an adverse visual change.

Viewer Exposure. Moderate to High. The subtransmission line would be highly visible in the foreground views of travelers on Iowa Street and adjacent residents. The number of viewers would be Low to Moderate, and the duration of view would be Moderate to Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 18, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

D.18.1.3 Environmental Setting for Connected Actions

The visual resources setting for the Connected Actions is divided into two general geographic areas described in the following sections.

Desert Center Area. The Desert Center area comprises much of the northern Chuckwalla Valley along the I-10 corridor, which is crossed by both Kaiser Road and SR 177 (Rice Road). The Chuckwalla Valley is a broad, predominantly natural appearing, enclosed landscape that is gradually transitioning to an energy production and transmission landscape. The valley is surrounded on most sides by dramatic mountain ranges including the Chuckwalla Mountains to the south, the Eagle Mountains to the west and northwest, the Coxcomb Mountains to the north and the Palen Mountains to the east. The surrounding mountains offer dramatic relief to the landscape and contain more diverse vegetation. The mountains are sometimes more than 1,000 feet higher than the valley floor.

From most vantage points, the valley landscape appears as vast open space and is generally flat with localized areas of erosion and gently rolling terrain that has light brown to tan and buff-colored soils and rock. Vegetation tends to be rounded, clumpy, and mottled in form and follows the line of the terrain. Vegetation colors are tan, brown, green, and dark green. The texture of the vegetation is moderately coarse consisting primarily of grasses, creosote bushes, and other shrubs with some isolated groupings of palm trees.

Clusters of buildings and structures are found along I-10 at Desert Center, Lake Tamarisk, the landing field southwest of the Desert Lily Sanctuary, and at the Eagle Mountain mining complex (former Kaiser iron ore mining facility). Other dispersed development such as residences, utility poles and structures, solar energy facilities, and substations also punctuate the landscape.

Residences at Lake Tamarisk and vehicles using the roadways are the primary sources of night light. One of the attractions for residents in this area is the brilliance of the night sky on clear nights, unencumbered by lighting scattered over a large urban area.

The viewshed encompasses much of the northern Chuckwalla Valley with views available from I-10, SR 177, Kaiser Road, four-wheel drive trails, the Desert Center commercial area, the Lake Tamarisk residential development, and the surrounding mountains and ridges. Although limited by a lack of trails or facilities, backcountry recreationists do access the surrounding mountains, Joshua Tree National Park, Palen McCoy Wilderness, and Chuckwalla Mountains Wilderness and would be afforded elevated viewing perspectives of the northern Chuckwalla Valley.

Blythe Area. The Blythe area straddles the I-10 corridor and is comprised of the western portion of Palo Verde Mesa (west of Blythe) and the eastern portion of Chuckwalla Valley. It consists of broad, open, and predominantly natural appearing arid and undeveloped landscapes that gradually transition to an energy production and transmission landscape. The mesa and valley are partially bordered by the Mule Mountains to the south, the McCoy Mountains to the north, and agricultural fields to the east. The rugged mountain ranges and ridges add visual variety to the otherwise flat desert landscape.

The mesa and valley floor are generally flat with localized areas of erosion and some sloping terrain. The landscape is generally horizontal with vast open space. The terrain has light brown to tan and buff-colored soils and rock and desert pavement openings. Vegetation tends to be rounded, clumpy, and mottled in form and follows the line of the terrain. Vegetation colors are tan, brown, green, and dark green. The texture of the vegetation is moderately coarse consisting primarily of grasses, desert scrub (largely scattered creosote bush), and a few palm trees.

Clusters of buildings and structures are found along I-10 at, and in the vicinity of, the Blythe Airport and associated with the Nicholls Warm Springs/Mesa Verde residential development south of the airport. Other dispersed development such as residences, utility poles and structures, solar energy facilities, and substations also punctuate the landscape. Nicholls Warm Springs/Mesa Verde residences and vehicles using the roadways (I-10 in particular) are the primary sources of night light

The viewshed encompasses much of the Palo Verde Mesa and eastern Chuckwalla Valley with views available from I-10, four-wheel drive recreational trails, the Blythe Airport area, the Nicholls Warm Springs/Mesa Verde residential development, and the Mule Mountains to the south and McCoy Mountains to the north. Although limited by a lack of trails or facilities, backcountry recreationists do access the Mule and McCoy mountains and would be afforded elevated viewing perspectives of the Blythe area.

D.18.2 Applicable Regulations, Plans, and Standards

Public agencies and planning policy establish visual resource management objectives in order to protect and enhance public scenic resources. Goals, objectives, policies, and implementation strategies and guidance are typically contained in resource management plans, comprehensive plans and elements, and local specific plans. There are 23 jurisdictional planning documents containing 62 policies pertinent to visual resources for the Proposed Project. These planning directives and the Proposed Project's consistency with them are evaluated in Appendix 9.

D.18.2.1 Federal

Federal Land Policy and Management Act. The Federal Land Policy and Management Act (FLPMA; 90 Stat. 2743; 43 U.S. Code 1601, et seq.) mandates protection of scenic values. It established the BLM as the jurisdictional agency for expanses of land in the West to be managed as multi-use lands. In order to meet its responsibility to maintain the scenic values of public lands, BLM developed a VRM System. The following sections of the FLPMA relate to the management of visual resources on federal lands.

- § 102(a): "The public lands [shall] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values."
- § 201(a): "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including... scenic values)."
- § 202(c)(1-9): "...in developing land use plans, the BLM shall use... the inventory of the public lands; consider present and potential uses of the public lands, consider the scarcity of the values involved and the availability of alternative means and sites for realizing those values; weigh long-term benefits to the public against short term benefits."
- § 505(a): "Each right-of-way shall contain terms and conditions which will ... (ii) minimize damage to the scenic and esthetic values."

California Desert Conservation Area Plan. The CDCA includes approximately 25 million acres of land. The CDCA overlaps the eastern section (Segment 6) of the Proposed Project. The FLPMA directed BLM to inventory CDCA resources and to prepare a comprehensive land-use management plan for the area—the CDCA Plan (BLM, 1980, amended 1999). The CDCA Plan did not include BLM VRM System Classes. However, the CDCA Plan was further amended in 2002 to include the Coachella Valley Plan. This CDCA Plan amendment was prepared under the regulations implementing the FLPMA of 1976. In the Coachella Valley Plan, BLM-managed lands were assigned VRM System Classes I through IV. Segment 6 of the Proposed Project is located within a portion of the Coachella Valley Planning Area southwest of Desert Hot Springs and northwest of Palm Springs. Segment 6 crosses a small portion of BLM land (less than 1 mile in length and comprising approximately 258 acres), which is designated VRM Class II, with a smaller adjacent area designated as VRM Class IV (Figure 2-2 in BLM, 2002a).

South Coast Resource Management Plan and Draft South Coast Resource Management Plan Revision. The 1994 South Coast Resource Management Plan (SCRMP) guides the management of approximately 296,000 acres of BLM-managed lands in portions of five counties: San Diego, Riverside, San Bernardino, Los Angeles, and Orange. The Riverside–San Bernardino County Management Area includes the western portions of these two counties (BLM, 1994), which are outside of the CDCA. The overall visual management directive in the 1994 SCRMP stipulates that all areas will be managed as VRM Class III, except within the Potrero and Santa Margarita reserve Areas of Critical Environmental Concern (Class II) and eligible segments of the Santa Margarita River (Class I; BLM, 1994). The only SCRMP area within the Proposed Project study area is the USDA Forest Service-managed San Jacinto Wilderness Area (BLM, 2011) located south of I-10 and approximately 3 miles from the Proposed Project. As part of the Draft SCRMP Revision, a visual inventory was conducted, and visual resource management classifications were proposed for each of four alternatives including a no action alternative (BLM, 2011). Since the preferred alternative has not been selected, and the revised SCRMP has not yet been adopted, the VRM Classes from the existing 1994 SCRMP would apply to the Proposed Project (i.e., Class III). However, none of the Proposed Project route segments cross BLM-managed land outside of the CDCA.

D.18.2.2 State

California Scenic Highway Program. In 1963, the California Legislature created the Scenic Highway Program to protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. The State regulations and guidelines governing the Scenic Highway Program are found in the Streets and Highways Code, section 260 et seq. A highway may be designated as "scenic" depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view.

Two Officially Designated State Scenic Highways are located within view of the Proposed Project: SR 62 (from I-10 to the San Bernardino County line) and SR 243 from SR 74 to the Banning city limit. SR 62 passes through the Proposed Project study area just west of the Devers Substation. One Eligible State Scenic Highway is also located within view of the Proposed Project: SR 111 (from SR 74 north to I-10).

Two other Eligible State Scenic Highways occur in the vicinity of the Proposed Project: SR 38 east of I-10 and SR 330 north of I-10 but would not be within view of the Proposed Project. While I-10 is shown as an Eligible State Scenic Highway in the Proposed Project study area in Riverside County plan area documents (General Plan Circulation Element; and The Pass, Reche Canyon/Badlands, and Western Coachella Valley area plans), it was removed from eligibility in 2013.

D.18.2.3 Local

The California Public Utilities Commission (CPUC) has State jurisdiction over the siting and design of the Proposed Project because the CPUC regulates and authorizes the construction of investor-owned public utility facilities. Such projects are exempt from local land use and zoning regulations and permitting in accordance with General Order No. 131-D, which is applicable to all components of a project including but not limited to the transmission lines and staging yards. However, Section XIV.B requires "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any non-discretionary local permits."

D.18.3 Environmental Impacts of the Proposed Project

This section discusses adverse visual effects that would occur with implementation of the Proposed Project including the direct and indirect effects of construction and the long-term presence of the Proposed Project (including operations and maintenance activities). This section also presents mitigation measures to avoid or reduce visual effects within the Proposed Project viewshed, or Proposed Project study area, previously shown in Figures D.18-1 through D.18-6 (all figures are presented at the end of this section). Cumulative effects are considered in Section E.

D.18.3.1 Approach to Impact Assessment

An *adverse visual effect* typically occurs within public view when: (1) an action perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; (2) an action introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or (3) visually prominent natural or cultural features of the landscape become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting. The degree of the visual effect depends upon how noticeable the adverse change may be. The noticeability of a visual effect is a function of project features, context, and viewing conditions (angle of view, distance, primary viewing directions, and duration of view).

The factors considered in determining adverse effects on visual resources included: (1) scenic quality of the Proposed Project landscape; (2) available visual access and visibility, frequency, and duration that the landscape is viewed; (3) viewing conditions (distance, angle of observation, relative size or scale, spatial relationships, motion, light conditions, seasonable variability, and atmospheric conditions) and the degree to which the Proposed Project components would dominate the view of the observer; (4) resulting contrast (form, line, color, and texture) of the Proposed Project facilities or activities with existing landscape characteristics and expected vegetation recovery time; (5) the extent to which project features or activities would block views of higher value landscape features; and (6) the level of public interest in the existing landscape characteristics and concern over potential changes. Digital techniques were used to produce simulations of the Proposed Project as it would appear with implementation as seen from several representative KOPs. The project simulations assisted in the assessment of the contrast of the Proposed Project with existing landscape elements. Effects on visual resources within the Proposed Project study area could result from various activities including facility construction, establishment of construction staging areas and access roads, and Proposed Project operation or presence of the built facilities.

The effects on visual resources can be either direct or indirect. The impact discussions presented later in this section primarily address the direct effects on visual resources since visual resources effects tend to almost always be direct. Two exceptions include increased traffic on roadways beyond the Proposed Project study area during construction and perceptions of (visible) regional industrialization. Perceptions of regional industrialization are addressed under Cumulative Effects (Section E). Where distinctions can be made between direct and indirect effects, they are discussed under the Proposed Project phases of construction and operation.

The assessment of environmental consequences utilized two fundamentally similar technical methods in combination — the **Visual Sensitivity–Visual Change (VS-VC) System** method for private and public lands not managed by the BLM and the **BLM's Visual Resource Management (VRM) System Contrast Rating** method for BLM-managed public lands. While both methods utilize similar inputs and terminology to arrive at a visual change conclusion, it is what is done with that conclusion where they differ the most. For example, the VS-VC method assesses the resulting level of visual change (or impact) associated with a project and then determines the significance of that level of change or impact based on a set of established criteria (see Section D.18.3.2). The vast majority of the Proposed Project is not located on BLM-managed land. The BLM's VRM method employs a visual contrast analysis to assess the level of change that would occur with a given project (action) but then determines if that level of change would be consistent with an applicable VRM classification (and management objective) that has previously been assigned to a given management area by the BLM. Approximately 1 mile of the Proposed Project is located on BLM-managed land.

None of the KOPs selected for detailed analysis are located on the one-mile segment of BLM-managed land crossed by the Proposed Project, and the area of BLM-managed land is not visible from any of the selected KOPs. Therefore, the KOP analyses utilized the VS-VC System of analysis, but the one-mile segment of BLM-managed land is addressed separately per the BLM's VRM System as directed by BLM staff. Each of these methods is discussed in more detail in the following paragraphs.

Visual Sensitivity–Visual Change System. Under the VS-VC System, overall visual change is determined at each KOP based on an assessment and equal weighting of project-induced visual contrast, project dominance, and view blockage (or view impairment) and an evaluation of a visual simulation of the Proposed Project. Each of the key factors contributing to visual change is discussed below.

Visual Contrast describes the degree to which a project's visual characteristics or elements (consisting of form, line, color, and texture) differ from the same visual elements established in the existing landscape. The degree of contrast can range from Low to High. The presence of forms, lines, colors, and textures in the landscape similar to those of a project's indicates a landscape more capable of accepting those project characteristics than a landscape where those elements are absent. This ability to accept alteration is often referred to as visual absorption capability and typically is inversely proportional to visual contrast.

Project Dominance is a measure of a feature's apparent size relative to other visible landscape features and the total field of view. A feature's dominance is affected by its relative location in the field of view and the distance between the viewer and the feature. The level of dominance can range from Subordinate to Dominant.

View Blockage or ***Impairment*** describes the extent to which any previously visible landscape features are blocked from view as a result of a project's scale and/or position. Blockage of higher-quality landscape features by lower-quality project features causes adverse visual impacts. The degree of view blockage can range from None to High.

Overall Visual Change is a concluding assessment as to the degree of change that would be caused by a project. Overall visual change is derived by combining the three equally weighted factors of visual contrast, project dominance, and view blockage, and can range from Low to High. In some cases, however, where view blockage is reduced by a project, overall visual change may be Improved.

Overall visual change is then considered within the context of the determined overall visual sensitivity of the existing landscape and viewing dynamics. Table D.18-9 illustrates the general interrelationship between visual sensitivity and visual change and is used as a consistency check between individual KOP evaluations. Actual parameter determinations (e.g., visual contrast, project dominance, and view blockage) are based on analyst experience and site-specific circumstances.

Table D.18-9. General Guidance for Review of Adverse Impact Significance

OVERALL VISUAL SENSITIVITY	OVERALL VISUAL CHANGE				
	Low	Low to Moderate	Moderate	Moderate to High	High
Low	Minor and Less than Significant[1] (Class III)	Minor and Less than Significant[1] (Class III)	Less than Significant[2] (Class III)	Less than Significant (Class III)	Less than Significant (Class III)
Low to Moderate	Minor and Less than Significant[1] (Class III)	Less than Significant (Class III)	Less than Significant (Class III)	Less than Significant (Class III)	Potentially Significant[3] (Class I, II, or III)
Moderate	Less than Significant (Class III)	Less than Significant (Class III)	Less than Significant (Class III)	Potentially Significant (Class I, II, or III)	Potentially Significant (Class I, II, or III)
Moderate to High	Less than Significant (Class III)	Less than Significant (Class III)	Potentially Significant (Class I, II, or III)	Potentially Significant (Class I, II, or III)	Significant[4] (Class I or II)
High	Less than Significant (Class III)	Potentially Significant (Class I, II, or III)	Potentially Significant (Class I, II, or III)	Significant (Class I or II)	Significant (Class I or II)

1 - **Minor and Less than Significant** – Impacts are visible but may not be noticeable. To the extent that are noticed, they are perceived as negative but Less than Significant in the context of existing landscape characteristics and viewing opportunities.
2 - **Less than Significant** – Impacts are generally noticeable and perceived as negative but do not exceed environmental thresholds of significance — they are still considered less than significant in the context of existing landscape characteristics and viewing opportunities.
3 - **Potentially Significant** – Impacts are readily perceived as negative and may exceed environmental thresholds depending on project- and site-specific circumstances. Implementation of effective mitigation may reduce a potentially significant impact to a less than significant level.
4 - **Significant** – Impacts are readily perceived as negative and exceed environmental thresholds. Implementation of effective mitigation may reduce a significant impact to a less than significant level.

While the interrelationships presented in Table D.18-9 are intended as guidance only, it is reasonable to conclude that lower visual sensitivity ratings paired with lower visual change ratings will generally correlate well with lower degrees of impact significance when viewed in the field. Conversely, higher visual sensitivity ratings paired with higher visual change ratings will tend to result in higher degrees of visual impact.

Implicit in this rating methodology is the acknowledgment that for a visual impact to be considered significant, two conditions generally exist: (1) the existing landscape is of reasonably high-quality and is relatively valued by viewers, and (2) the perceived incompatibility of one or more project elements or characteristics tends toward the high extreme, leading to a substantial reduction in visual quality.

The results of the visual change analysis and impact significance conclusions are summarized by KOP in Appendix 10. Additional explanation of the VS-VC System is also provided in Table Ap.10-2 in Appendix 10.

BLM Visual Resource Management System Contrast Rating Method. Under the Contrast Rating Method (BLM, 1986b, 1984), a project is analyzed for its effects on visual resources by comparing the landscape characteristics that would be created by the project to the existing landscape characteristics and arriving at an assessment of visual contrast that would result from changes in landforms and water, vegetation, and structures. The degree of contrast can range from None to Strong and essentially evaluates a project's consistency with the visual elements of form, line, color, and texture already established in the project viewshed. In a sense, visual contrast indirectly indicates a particular landscape's ability to absorb a project's components and location without resulting in an uncharacteristic appearance. In other words, the amount of visual contrast between the project and the existing landscape character directly determines the degree to which the project would adversely affect the visual quality of an existing landscape.

Other elements that are considered in evaluating visual contrast include the degree of natural screening by vegetation and landforms; placement of structures relative to existing vegetation, landforms and other structures; observer's angle of view relative to the project; distance from the point of observation; viewing duration/spatial relationships; atmospheric conditions; season of use; lighting conditions; and relative size or scale of the project.

Once the degree of anticipated contrast is determined, a conclusion on the overall level of change is made (ranging from Very Low to High) and compared to the applicable VRM Classification (Interim or Final) for a determination of conformance with the VRM Class management objectives.

In the case of the Proposed Project, and as previously mentioned, the small section of BLM-managed land (approximately 1 mile) crossed by the Proposed Project's Segment 6, between Haugen-Lehmann Way and Whitewater Canyon Road, is designated VRM Class II. The VRM Class II Management Objective is defined as follows:

> **VRM Class II.** *The objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.*

Although a KOP was not established for the one-mile segment of BLM-managed land crossed by the Proposed Project, a representative Contrast Rating form for the affected area is provided in Appendix 10.

The overall perceptible visual change and consistency with applicable visual resource management policy for the Proposed Project will be assessed within the context of the significance criteria presented in the following section.

D.18.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures for visual resources.

D.18.3.2 Impact Criteria

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). The criteria listed below were used to determine if and how the Proposed Project would result in impacts on visual resources.

1. *Would the Proposed Project have a substantial adverse effect on a scenic vista?*

   A scenic vista is generally considered a specific viewpoint or viewing location (often an elevated overlook) that provides expansive views of a highly valued landscape for the benefit of the general public. Scenic vistas are frequently officially designated by public agencies and are often signed and accessible to the public for the express purposes of viewing and sightseeing. Although there are expansive views of the surrounding landscape throughout the I-10 corridor, and there are slightly elevated perspectives providing slightly superior (elevated) views of the Proposed Project as a result of terrain variation, there are no officially designated or community recognized scenic vista viewpoints in the Proposed Project study area.

2. *Would the Proposed Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

   SR 62 and SR 243 are Officially Designated State Scenic Highways with views of the Proposed Project. SR 111 is an Eligible State Scenic Highway with views of the Proposed Project. This criterion will be utilized to determine visual impacts relative to these three State scenic highways.

3. *Would the Proposed Project substantially degrade the existing visual character or quality of the site and its surroundings?*

   The majority of project impacts associated with construction or long-term presence of project components fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, this criterion will be utilized regarding the Proposed Project's effects on existing landscapes and views.

4. *Would the Proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

   Proposed Project construction or the long-term presence of the Proposed Project could create a new source of substantial light or glare that could adversely affect day or nighttime views in the area or be hazardous to motorists or pedestrians.

5. *The presence of the Proposed Project would result in a long-term (greater than five years) inconsistency with established BLM VRM Class management objectives (applies only to public lands managed by the BLM).*

   There would be an occurrence where BLM land would be affected by the Proposed Project, and the applicable VRM Class management objective would not be met. Therefore, this criterion will be utilized for the analysis of the Proposed Project's consistency with BLM resource management objectives.

6. *Proposed Project construction or the presence of Proposed Project components would result in an inconsistency with local regulations, plans, and standards applicable to the protection of visual resources.*

   There would be occurrences where the presence of Proposed Project components would be inconsistent with applicable local regulations, plans, and standards pertaining to visual resources.

D.18.3.3 Impacts and Mitigation Measures

This section addresses project impacts by timeframe: construction and operation. The impact discussion concludes with an overall assessment of the Proposed Project's visual impacts. Where appropriate, mitigation measures are provided for each impact.

Construction Impacts

Impacts VR-1 through VR-7 address construction impacts of the Proposed Project.

Impact VR-1: Construction would result in adverse visual effects due to the presence of equipment, vehicles, materials, and workforce

Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project study area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas.

In many locations, SCE would also install temporary tower structures, called shoo-flies, to facilitate construction and minimize interruptions to existing electrical and telecommunication facilities. The numbers of shoo-flies and work areas are preliminary and will not be known for certain until final engineering is complete. However, SCE currently estimates that 51 shoo-flies could be required (see Table B-13 in Section B for details).

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from I-15, I-10, SR 62, SR 111, SR 243, San Timoteo Canyon Road, and other local roads, recreational access roads, nearby residential areas, residential enclaves, and recreational areas and facilities. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the general project vicinity, roads in the Proposed Project vicinity, and all of the KOPs. Groups or clusters of shoo-flies may be particularly noticeable, though the incremental visual effect of these structures would be substantially attenuated by the visual context of the existing transmission line structures, new transmission line structures, and construction equipment (cranes).

The majority of construction activities and equipment brought into the Proposed Project study area and onto the Proposed Project sites would be temporary in nature (as would be the shoo-flies) and would, therefore, not result in a substantial long-term visual impact. However, the Proposed Project's substantial visual contrast associated with the longer-term construction activities (e.g., use of construction yards) can be reduced through the implementation of Mitigation Measure VR-1a (Screen construction activities from view).

Mitigation Measure for Impact VR-1: Construction would result in adverse visual effects due to the presence of equipment, vehicles, materials, and workforce

VR-1a **Screen construction activities from view.** Construction yards, staging areas, and material and equipment storage areas shall be visually screened using temporary screening fencing. Fencing will be of an appropriate structure, material, and color for each specific location. This requirement shall not apply if SCE can demonstrate that construction yards are located away from areas of high public visibility including public roads, residential areas, and public recreational facilities. For any site that SCE proposes to exempt from the screening requirement, SCE shall define the site on a detailed map demonstrating its visibility from nearby roads, residences, or recreational facilities to the CPUC and BLM for review and approval at least 60 days prior to the start of construction at that site.

Impact VR-2: Construction would result in visual contrast due to vegetation removal

Areas of ground surface disturbance (characterized by high color, line, and texture contrasts) and vegetation removal would remain visible from various vantage points for an extended period after the conclusion of construction activities because revegetation of areas in arid and semi-arid environments where the Proposed Project would be located can be difficult and generally of limited success. Due to the extended length of construction and the slow pace of revegetation in the Proposed Project area, this impact and the visual contrast created could appear prominent from some viewing locations for many years, and cause Moderate to High levels of visual change, which could result in substantial visual effects. This would also be inconsistent with the VRM Class II Management Objective. The Proposed Project's prominent visual contrast associated with vegetation removal can be reduced through the implementation of Mitigation Measures VR-2a (Minimize vegetation removal and ground disturbance) and Mitigation Measure VEG-1d (Restore or revegetate temporary disturbance areas; Section D.4, Biological Resources – Vegetation). Table D.18-11 (presented at the end of Section D.18) identifies the specific locations where Mitigation Measure VR-2a should be implemented.

Mitigation Measures for Impact VR-2: Construction would result in visual contrast due to vegetation removal

VR-2a **Minimize vegetation removal and ground disturbance.** Only the minimum amount of vegetation necessary for the construction of structures and facilities shall be removed during construction. . At the structure locations defined in Table D.18-11, structure and access road scars may be highly visible when located on hill slopes and along ridges, or when visible from elevated vantage points. In order to reduce visual impacts, the boundaries of all areas to be disturbed at the locations defined in Table D.18-11 shall be delineated consistent with the requirements of Biological Resources Mitigation Measure VEG-1c. Staking shall define staging areas, access roads, spur roads, tower locations, pulling sites, and sites for temporary placement of spoils. Stakes and flagging shall be installed before construction and in consultation with the Project Biologist and the CPUC/BLM Environmental Monitor or Visual Specialist. Areas staked shall be as small as possible in order to minimize the visibility of ground disturbance from sensitive viewing locations such as roads, trails, residences, and recreation facilities and areas. Parking areas and staging and disposal site locations shall be similarly located in areas approved by the Project Biologist and CPUC/BLM's Environmental Monitor or Visual Specialist prior to the start of construction. All disturbances by Proposed Project vehicles and equipment shall be confined to the staked and flagged areas.

VEG-1d **Restore or revegetate temporary disturbance areas** (Section D.4, Biological Resources – Vegetation)

Impact VR-3: Construction would result in visual contrast associated with retaining walls, land scarring, and establishment of graveled surfaces

New retaining walls, those areas of temporary disturbance where the soil surface (characterized by high color, line, and texture contrasts) is exposed and/or removed, or where lighter-colored gravel is placed could exhibit considerable color contrast with adjacent darker vegetation and soil colors. This long-term visual contrast could appear prominent from some viewing locations and cause Moderate to High levels of visual change, which would also be inconsistent with the VRM Class II Management Objective. The prominent visual contrast associated with retaining walls, land scarring, and graveled surfaces can be reduced through the implementation of Mitigation Measure VR-3a (Reduce color contrast of retaining walls, land scars, and graveled surfaces). Table D.18-11 (presented at the end of Section D.18) identifies the specific locations where Mitigation Measure VR-3a should be implemented.

Mitigation Measure for Impact VR-3: Construction would result in visual contrast associated with retaining walls, land scarring, and establishment of graveled surfaces

VR-3a **Reduce color contrast of retaining walls, land scars, and graveled surfaces.** Where construction would unavoidably create land scars or retaining walls visible from sensitive public viewing locations (as defined in Table D.18-11), disturbed soils and new walls shall be treated with an appropriate color or material (Natina Concentrate, Eonite, or Permeon, or similar). The material shall be approved by the CPUC and BLM, and the intent shall be to reduce the visual contrast created by the lighter-colored disturbed soils and rock with the darker soil and vegetated surroundings. SCE shall consult with the CPUC and BLM and/or their authorized representative(s) on a site-by-site basis and obtain written approval prior to the use of any colorants.

Impact VR-4: Construction could result in visual contrast associated with in-line views of retaining walls and land scars

At the structure locations defined in Table D.18-11, the Proposed Project would be located in highly visible areas or on hillsides or hilltops. Construction of Proposed Project structures and access and/or spur roads to individual structure locations has the potential to create extended, in-line views of newly graded terrain. These types of views can exacerbate the visibility, prominence, and overall visible contrast of graded surfaces such that the overall level of visual change becomes Moderate to High. This would also not be consistent with the VRM Class II Management Objective. The potential for prominent visual contrast associated with in-line views of land scars can be reduced through the implementation of Mitigation Measure VR-4a (Minimize in-line views of retaining walls and land scars). Table D.18-11 (presented at the end of Section D.18) identifies the specific locations where Mitigation Measure VR-4a should be implemented.

Mitigation Measures for Impact VR-4: Construction could result in visual contrast associated with in-line views of retaining walls and land scars

VR-4a **Minimize in-line views of retaining walls and land scars.** In its final Project design, SCE shall incorporate design features that reduce the in-line visibility of all access and spur roads, retaining walls, and ground disturbance areas at the locations defined in Table D.18-11. These design features include alternative access and spur road routes, the use of "drive and crush" access, and redesign and placement of retaining walls to reduce the need for new roads and retaining walls and to reduce or eliminate the in-line visibility of these facilities. SCE's final design shall document the process used to minimize visibility of the access roads or other visible road features and shall include the following:

- Approximate location, length, and design of alternative access or spur road routes that would replace proposed roads.
- Vegetation that would be affected and steepness of terrain for consideration of vegetation and erosion impacts.
- Areas where "drive and crush" access is a feasible measure to avoid access road scars (i.e., no grading or vegetation removal is required). SCE shall define frequency of driving, vehicle types to be used, and likelihood of vegetation recovery.

- This documentation shall be provided to the CPUC/BLM at least 90 days prior to the start of construction.

Impact VR-5: Construction could result in visual contrast associated with the marking of natural features

Often during the course of project construction, paint or permanent discoloring agents are applied to rocks or vegetation to indicate survey or construction activity limits or to provide direction for construction activities. In some cases, such markings can result in long-term visible color contrast and substantial visual change, which would also be inconsistent with the VRM Class II Management Objective. The visual contrast associated with the marking of natural features can be reduced through the implementation of Mitigation Measure VR-5a (Prohibit construction marking of natural features).

Mitigation Measure for Impact VR-5: Construction could result in visual contrast associated with the marking of natural features

VR-5a **Prohibit construction marking of natural features.** SCE shall not apply paint or permanent discoloring agents to rocks or vegetation to indicate survey or construction activity limits or for any other purpose. This measure does not apply to temporary marking agents used to identify underground utilities.

Impact VR-6: Construction could result in visual contrast associated with fugitive dust, waste, and trash

Grading activities for the construction of specific sites, access roads, and spur roads have the potential to generate dust clouds, creating visual contrast that can substantially degrade the quality of a site. Implementation of Mitigation Measure AQ-1a (Control fugitive dust; Section D.3, Air Quality) can reduce this impact. Also, during construction, there is the potential for trash and food-related waste to be discarded inappropriately at construction sites and then be transported by wind and/or animals across the landscape, resulting in additional visual contrast and degradation of landscape quality and character. Implementation of Mitigation Measure WIL-1b (Ensure wildlife impact avoidance and minimization) can reduce this impact. Neither of these effects would be consistent with the VRM Class II Management Objective.

Mitigation Measures for Impact VR-6: Construction could result in visual contrast associated with fugitive dust, waste, and trash

AQ-1a **Control fugitive dust** (Section D.3, Air Quality)

WIL-1b **Ensure wildlife impact avoidance and minimization** (Section D.4, Biological Resources – Vegetation)

Impact VR-7: Construction could result in the use of night lighting or installation of reflective surfaces, which could cause undesirable night light and glare effects

It is anticipated that some construction activity would take place at night, which could result in substantial adverse night lighting visual effects given the general lack of lighting along much of the Proposed Project route. There is also potential for daytime (or nighttime) glare off of the Proposed Project's transmission structures that could cause undesirable glare effects. Such visual degradation would also be inconsistent with the VRM Class II Management Objective. However, the potential glare and night lighting effects can be reduced and managed through the implementation of Mitigation Measures VR-7a (Minimize night lighting at project facilities) and VR-9a (Treat structure surfaces).

Mitigation Measures for Impact VR-7: Construction could result in the use of night lighting or installation of reflective surfaces, which could cause undesirable night light and glare effects

VR-7a **Minimize night lighting at project facilities.** SCE shall avoid night lighting where possible and minimize its use under all circumstances. To ensure this, SCE shall prepare a Night Lighting Management Plan for both construction and operation, incorporating the following general principles and specifications:

- Use of portable truck-mounted lighting.
- Emphasis on use of low-pressure sodium (LPS) or amber light-emitting diode (LED) lighting.
- White lighting (metal halide) would: a) only be used when necessitated by specific work tasks; b) would not be used for dusk-to-dawn lighting; and c) would be less than 3500 Kelvin color temperature.
- All lamp locations, orientations, and intensities including security, roadway, and task lighting.
- Each light fixture and each light shield.
- Total estimated outdoor lighting footprint expressed as lumens or lumens per acre.
- Detailed list of anticipated circumstances and activities that would require night lighting including the expected frequency of the activity, the duration of the activity, and the expected amount of lighting that would be necessary for that activity.
- Light fixtures that could be visible from beyond project facility boundaries shall have cutoff angles sufficient to prevent lamps and reflectors from being visible beyond the project facility boundary, including security lighting.
- Motion sensors and other controls to be used, especially for security lighting such that lights operate only when the area is occupied.
- Surface treatment specification that will be employed to minimize glare and sky glow.

The Night Lighting Management Plan shall also consider the following factors:

- All temporary construction lighting and permanent exterior lighting shall include: (a) lamps and reflectors that are not visible from beyond the construction site or facility including any off-site security buffer areas; (b) lighting that shall not cause excessive reflected glare; (c) direct lighting that shall not illuminate the nighttime sky, except for required FAA aircraft safety lighting (which, if required, shall be an on-demand, audio-visual warning system that is triggered by radar technology); (d) minimization of illumination of the Proposed Project and its immediate vicinity; (e) creation of sky glow caused by project lighting shall be avoided; and (f) compliance with local policies and ordinances to be outlined in the Night Lighting Management Plan. All permanent light sources shall be below 3,500 Kelvin color temperature (warm white) and shall be full cutoff fixtures.
- Always-on security lighting is to be limited to one low-wattage, fully shielded, full cutoff light fixture at the main entrance to facilities. All other security lighting is to be motion activated only through the use of passive infrared sensors and controlled as specific zones such that only targeted areas are illuminated. No other lighting is to be utilized on a nightly basis when a facility is not occupied.
- Lighted nighttime maintenance is to be minimized or avoided as a routine practice and should occur only during emergencies.

The draft Night Lighting Management Plan shall be submitted to the CPUC and BLM at least 60 days prior to the start of construction. Following the BLM's and CPUC's review of the draft plan, and at least 15 days prior to the start of construction, SCE shall submit to the CPUC and BLM for review and approval, a final Night Lighting Management Plan. Construction activities shall not start until CPUC's and BLM's approvals of the plan have been received.

Impact VR-8: Long-term presence of the project would result in landscape changes that degrade existing visual character or quality

Impact VR-8 considers the permanent impacts (i.e., operational effects) of the Proposed Project. The analysis of operational effects was conducted with respect to: (1) visual change perceived from representative static KOPs at sensitive public viewing locations, (2) visual change associated with FAA marker requirements, (3) visual change perceived from transient linear viewpoints along key local roadways, (4) the potential for project night lighting and daytime glare and visual effects, and (5) project consistency with regulatory plans and policies. As previously stated, visual resources effects associated with project operation are typically direct effects. Therefore, the operational effects addressed in this section should be considered direct effects, unless otherwise noted. Each of these features is illustrated in visual photosimulations presented in the KOP analyses described in the following sections.

KOP Analyses

An in-depth visual analysis of operational effects was conducted for the sensitive view areas represented by stationary KOPs 1 through 18 (Figures D.18-8a through D.18-25b). The results of the effects analysis are discussed below and presented in the Summary of Key Observation Point Analyses in Table Ap.10-1 included in Appendix 10. Although a formal KOP was not established for the one-mile segment of BLM-managed land crossed by the Proposed Project between Haugen-Lehmann Way and Whitewater Canyon Road, a representative VRM Contrast Rating Data Sheet is provided in Appendix 10 and discussed below.

KOP 1 – Right-of-Way Crossing of Mission Road in Loma Linda. Figure D.18-8A presents a life-size scale view to the south from Mission Road, down the ROW and the park that has been developed under portions of the transmission line, in the City of Loma Linda. The view encompasses that portion of Segment 1 heading south from Mission Road, toward San Bernardino Junction, just beyond the first ridgeline at the far left of the image. The image captures the park setting beneath the transmission lines in the ROW, the residential developments that back onto the ROW, and the hills that provide a backdrop to the south. Figure D.18-8B presents a visual simulation of three existing transmission lines replaced by two taller, double-circuit facilities of identical lattice structure design. Given the unobstructed sightlines, road travelers, park users, and adjacent residents would be afforded Extended viewing durations of the structures, which would generally be consistent with the form and line of the existing utility structures. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in a reduction in the number and types of structures, and overall structural complexity and industrial character within the ROW, though the new taller structures would appear more visually prominent, and skylining would be increased. In the context of the existing towers and lines, the new foreground structural landscape with fewer towers would exhibit Slightly Reduced visual contrast and would appear Co-dominant relative to the scale of the existing landscape features. The visually prominent structures would attract the attention of the casual observer, but view blockage of higher value landscape features (background sky or ridgelines) would be Slightly Reduced.

The overall visual change would be *Improved*, and in the context of the existing landscape's *Moderote to High* visual sensitivity, the resulting visual effect would also be improved. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended, however, to further enhance the visual effect along Segment 1.

KOP 2 – Canyon Vista Drive and East Chase Canyon Lane in Colton. Figure D.18-9A presents a life-size scale view to the west toward the existing transmission lines along the ridgeline south of the residential development, from the intersection of Canyon Vista Drive and East Chase Canyon Lane, in the City of Colton. The view encompasses a residential neighborhood and a portion of Segment 2 between San Bernardino Junction and the Vista Substation. Three transmission lines are positioned along the ridgeline south of the subdivision. Figure D.18-9B presents a visual simulation of replacement of one of the three existing transmission lines with taller structures. Given the unobstructed sightlines, adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of one of the three existing transmission lines with taller, double-circuit lattice structures. Although structure skylining would increase slightly, overall structural prominence, complexity, and industrial character would appear similar to the existing conditions.

In the context of the existing towers and lines, the complex vertical form of the Proposed Project's lattice-steel towers and curvilinear conductors would exhibit Low visual contrast and would appear as a foreground, Co-dominant feature relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, but view blockage of higher value landscape features (background sky or ridgelines) would be Low.

The overall visual change would be Low to Moderate, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along Segment 2 of the Proposed Project.

KOP 3 – Pilgrim Road in San Timoteo Canyon. Figure D.18-10A presents a life-size scale view to the west toward the Proposed Project route, from Pilgrim Road, off of San Timoteo Canyon Road in San Timoteo Canyon in the City of Calimesa. The rural residential view captures portions of three transmission lines that traverse the hills and ridgelines that define the southern border of the canyon. Figure D.18-10B presents a visual simulation of replacement of three existing transmission lines with two facilities. Given the unobstructed sightlines, adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. Although the structures would typically be taller than the existing structures that they are replacing, the new structures would be placed lower on the slopes, so structural prominence would be similar to the existing conditions, and skylining would be less noticeable or similar to existing conditions. Also, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.

In the context of the existing towers and lines, the new facilities would exhibit *Reduced* visual contrast and would collectively, constitute a foreground, Co-dominant feature relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, but view blockage of higher value landscape features (background sky or ridgelines) would be Reduced.

The overall visual change would be Improved, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be improved. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended, however, to further enhance the visual effects along this portion of the Proposed Project.

KOP 4 – Westbound San Timoteo Canyon Road. Figure D.18-11A presents a life-size scale view to the southwest toward the Proposed Project route, from westbound San Timoteo Canyon Road, approximately 0.68 miles east of Redlands Boulevard. The rural residential view captures portions of the three transmission lines that traverse the hills and ridgelines that define the southwest border of San Timoteo Canyon. Figure D.18-11B presents a visual simulation of replacement of three existing transmission lines with two facilities. Given the unobstructed sightlines, residents and travelers on San Timoteo Canyon Road would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. Although the structures would typically be taller than the existing structures that they are replacing, the new structures would be placed lower on the slopes, so structural prominence would be similar to the existing conditions, and skylining would be less noticeable or similar to existing conditions. Also, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.

In the context of the existing towers and lines, the new facilities would exhibit Reduced visual contrast and would be foreground, Co-dominant features relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, but view blockage of higher value landscape features (background sky or ridgelines) would be Reduced.

The overall visual change would be Improved, and in the context of the existing landscape's *Moderate to High* visual sensitivity, the resulting visual effect would be improved. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended, however, to further enhance the visual effects along this portion of the Proposed Project.

KOP 5 – Boros Boulevard – Tukwet Canyon. Figure D.18-12A presents a life-size scale view to the northeast from Boros Boulevard, one of the residential streets in the Tukwet Canyon residential development, at the eastern end of San Timoteo Canyon. The view encompasses a residential neighborhood and a portion of Segment 4 between the El Casco Substation and I-10. Three transmission lines traverse the ridgelines that define the northern boundary of the Tukwet Canyon residential development. Figure D.18-12B presents a visual simulation of replacement of three existing transmission lines with two facilities. Given the unobstructed sightlines, adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would be more visible to residents and cause increased skylining due to their closer placement to the south side of the ROW, thereby appearing more visually prominent. However, unlike the case where existing structures are located at grade with adjacent south side residences and are somewhat less visible (particularly the more northerly placed transmission line), this portion of Segment 4 is elevated along the ridgeline, and the structures of all three existing lines are clearly visible from the adjacent south-side residences. Therefore, the reduction in the overall number and types of structures that would occur with the Proposed Project would reduce: (1) visible structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.

In the context of the existing towers and lines, the new facilities would exhibit Low visual contrast and would collectively, constitute a foreground, Co-dominant feature relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, but view blockage of higher value landscape features (background sky or ridgelines) would be Slightly Reduced.

The overall visual change would be Low, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project.

KOP 6 – Stetson Community Park in the City of Beaumont. Figure D.18-13A presents a life-size scale view to the northwest from the east end of Stetson Community Park, viewing down the park that has been developed within the ROW in the City of Beaumont. The view encompasses a residential ROW park setting and a portion of Segment 4 just east of I-10. Three transmission lines pass through the residential development. Figure D.18-13B presents a visual simulation of replacement of three existing transmission lines with two sets of structures. Given the unobstructed sightlines, park users, roadway travelers, and adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from within and north of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.

In the context of the existing towers and lines, the new facilities would exhibit Reduced visual contrast when viewed from within the ROW (KOP 6), from north of the ROW, and from most locations south of the ROW (including roads and approximately 48 percent of the south-side residences). From some residences bordering the south side of the ROW (approximately 36 percent of the south-side residences), project-induced visual contrast would appear Moderate, while from a more limited number of residential views south of the ROW and adjacent to a structure pair (approximately 16 percent of the south-side residences), visual contrast would appear High.

From all residences, the Proposed Project would appear as a foreground, Co-dominant feature relative to the scale of the existing landscape features (and transmission lines). The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (golf course grounds, sky, and mountains) would be Reduced when viewed from within the ROW (KOP 6), from north of the ROW, and from most locations (roads and residences) south of the ROW. View blockage would be

Low to Moderate when viewed from some residences south of the ROW, and Moderate to High when viewed from a smaller percentage of south-side residences adjacent to a structure pair.

The overall visual change would be Improved when viewed from within the ROW (KOP 6), from north of the ROW, and from many locations south of the ROW. Overall visual change would appear Moderate when viewed from some residences south of the ROW, and Moderate to High when viewed from a more limited number of south-side residences adjacent to a structure pair. In the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be improved when viewed from north of, within, and many locations south of the ROW — for approximately 65 percent of all affected residences. The visual impact would be adverse but less than substantial for some residences south of the ROW, including approximately 25 percent of all affected residences. The sensitivity would be substantial for about 10 percent of south-side residences — all those that would be adjacent to a proposed new structure pair. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project. In addition, the Tower Relocation Alternative defined in Section C and Appendix 5, would require that these structure pairs to be moved farther from residences, reducing the severity of the visual impact. The effects of this alternative are presented in Section D.18.4.1.

Residential Views Adjacent and to the South of the ROW in the Beaumont Area. As noted above for KOP 6, similar to all of the Proposed Project views from north of the ROW, or within the ROW, a substantial portion of the residential views bordering the south side of the ROW (approximately 48 percent of the south-side residences) would experience an improved visual change as a result of longer, synchronized conductor spans, fewer (or no) visible structures in the immediate proximity of the residences, and/or greater distance between the residences and structure pairs. By reducing visible industrial character and structural clutter associated with the different sized structures and unsynchronized conductor spans of the present condition, the Proposed Project would result in a reduction of overall visual contrast when viewed from these residential locations.

Approximately 36 percent of the residences bordering the south side of the ROW would be more substantially affected due to the generally closer proximity to the taller structures but without structure pairs being located adjacent to the residences. In this case, conductor spans may be located closer to the south side of the ROW (resulting in increased structural dominance and view blockage when viewed from the south). The severity of the effect from these residences would depend on the type of view that is compromised. For example, in some cases, the view from within a residence may capture no visible structures, but the view from the backyard may be more adversely affected by the increased prominence of a structure pair down the ROW or the series of overhead conductors in closer proximity to the residence. For these residences where Proposed Project structures would be located closer to residences than they are currently, the resulting incremental visual change (from the present condition) would tend to be Moderate and the overall visual effect would be less than substantial.

For approximately 16 percent of the residences bordering the south side of the ROW and directly adjacent to a proposed new structure pair, the degree of visual contrast, structure prominence, and view blockage that would be experienced from the residence and/or yard would be somewhat more severe and would result in an overall perceived Moderate *to High* level of incremental visual change that, in the context of the Moderate to High degree of visual sensitivity, would constitute a substantial visual effect. When viewed from most locations (roads, residences, and parks), this more severe visual effect would substantially compromise the landscape viewing experience from those relatively few residence-specific viewing locations as represented by the following analysis for KOP 6A.

KOP 6A – Sagura Road in the Solera residential golf community. Figure D.18-13C presents a life-size scale view to the northwest toward the Proposed Project route from Sagura Road, one of the residential streets in the Solera residential golf community and just west of Snowberry Road in the City of Beaumont. The view encompasses a portion of the residential development backing on to the existing ROW to the north containing three partially screened transmission lines. Figure D.18-13D presents a visual simulation of replacement of the three existing transmission lines with two transmission lines. Given the relatively unobstructed sightlines, adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission line structures, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent due to their concentration in the southern half of the ROW and closer proximity to the residences on the south side of the ROW.

The closer proximity and substantially increased height of the new structures would contribute to the apparent structural dominance and high degree of visual contrast. From the residences in close proximity to the structures, the Proposed Project would appear as a foreground, Dominant feature relative to the scale of the existing landscape features (and transmission lines). The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (sky, and mountains to the north) would be Moderate when viewed from the south side of the ROW.

The overall visual change would be Moderate to High. In the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual impact would be substantial. It should be noted that while the KOP 6A simulation is considered representative of similar views from close proximity residences along the south side of the ROW, at approximately 195 feet from the nearest residence and approximately 320 feet from the residence that appears directly in front of the two structures in Figure D.18-3D, KOP 6A *does not* present a "worst case" visual impact scenario. There are a number of residences between the City of Beaumont and the residential community of Whitewater to the east where the structure pairs would be located substantially closer to existing residences. In some cases, the structures would be within approximately 75 to 100 feet of existing residences. The views from these residences would be even more impacted.

Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project. In addition, the Tower Relocation Alternative defined in Section C and Appendix 5, would require specific structure pairs with the most severe visual impacts to be moved farther from residences, reducing the severity of the visual impact. The effects of this alternative are presented in Section D.18.4.1.

KOP 7 – Oak Valley Golf Course. Figure D.18-14A presents a life-size scale view to the east toward the Proposed Project route from the Oak Valley Golf Course in the City of Beaumont. The view encompasses a residential golf community and a portion of Segment 4 north of Oak Valley Parkway and east of I-10. Three transmission lines are prominently visible as they pass through this landscape. Figure D.18-14B presents a visual simulation of the replacement of the three existing transmission lines with two facilities. Given the relatively unobstructed sightlines, recreational visitors and adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from north of, within, and from most locations south of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. From some viewing locations south of the ROW, however, the structures would appear more visually prominent due to their concentration in the southern half of the ROW (see the discussion in the section above — Residential Views Adjacent and to the South of the ROW in the Beaumont Area).

Similar to KOP 6, in the context of the existing towers and lines, the new facilities would exhibit Reduced visual contrast when viewed from north of the ROW (KOP 7), within the ROW, and from most locations (roads and residences) south of the ROW. From some residences bordering the south side of the ROW (approximately 36 percent of the south-side residences), project-induced visual contrast would appear Moderate, while from a more limited number of residential views south of the ROW and adjacent to a structure pair (approximately 16 percent of the south-side residences), visual contrast would appear High. From all residences, the Proposed Project would appear as a foreground, Co-dominant feature relative to the scale of the existing landscape features (and transmission lines). The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (golf course grounds, sky, and mountains) would be Reduced when viewed from north of the ROW (KOP 7), within, and most locations south of, the ROW. View blockage would be Low to Moderate when viewed from some residences south of the ROW, and Moderate to High when viewed from a more limited number of south-side residences adjacent to a structure pair.

The overall visual change would be Improved when viewed from north of (KOP 7), within, and from most locations south of, the ROW. Overall visual change would appear Moderate when viewed from some residences south of the ROW and Moderate to High when viewed from a smaller percentage of south-side residences adjacent to a structure pair. In the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual impact would be Improved (when viewed from north of, within the ROW and from most locations south of the ROW. This improvement in visual setting would occur for approximately 65 percent of all affected residences. The effect would be adverse but less than substantial for about 25 percent of the affected residences, south of the ROW However, the visual impact would be substantial for about 10 percent of the south-side residences that would be adjacent to a proposed new structure pair. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project.

The Tower Relocation Alternative (defined in Section C and Appendix 5) would require specific structure pairs with the most severe visual impacts to be moved farther from residences, reducing the severity of the visual impact. The effects of this alternative are presented in Section D.18.4.1.

KOP 8 – Stargazer Street and Rose Avenue in the Estates Residential Development in the City of Beaumont. Figure D.18-15A presents a life-size scale view to the east-southeast toward the Proposed Project route from the intersection of Stargazer Street and Rose Avenue in The Estates subdivision, in the City of Beaumont. The view encompasses a portion of the subdivision backing on to the existing ROW containing three prominently visible transmission lines. Figure D.18-15B presents a visual simulation of replacement of the three existing transmission lines with two facilities. Given the relatively unobstructed sightlines, adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from north of, within, and from most locations (roads and residences) south of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. From some viewing locations south of the ROW, however, the structures would appear more visually prominent due to their concentration in the southern half of the ROW (see the discussion above under *Residentiol Views Adjocent ond to the South of the ROW in the Beoumont Areo*).

Similar to KOPs 6 and 7, in the context of the existing towers and lines, the new facilities would exhibit Reduced visual contrast when viewed from north of the ROW (KOP 8), within the ROW, and from most locations (roads and residences) south of the ROW. From some residences bordering the south side of the ROW (approximately 36 percent of the south-side residences), project-induced visual contrast would appear Moderate, while from a more limited number of residential views south of the ROW and adjacent a structure pair (approximately 16 percent of the south-side residences), visual contrast would appear High. From all residences, the Proposed Project would appear as a foreground, Co-dominant feature relative to the scale of the existing landscape features (and transmission lines). The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (sky, and mountains) would be Reduced when viewed from north of the ROW (KOP 8), within, and from most locations south of, the ROW. View blockage would be Low to Moderate when viewed from some residences south of the ROW and Moderate to High when viewed from a more limited number of south-side residences adjacent to a structure pair.

The overall visual change would be Improved when viewed from north of (KOP 8), within the ROW, and from most locations south of the ROW. Overall visual change would appear Moderate when viewed from some residences south of the ROW and Moderate to High when viewed from a smaller percentage of south-side residences adjacent to a structure pair. In the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual impact would be *Improved* when viewed from north of, within, and most locations south of the ROW for approximately 65 percent of all affected north side and south-side residences. The visual impact would be less than substantial for about 25 percent of residences south of the ROW. The impact would be substantial for about 10 percent of south-side residences: those that would be located adjacent to a proposed new structure pair. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project. In addition, the Tower Relocation Alternative defined in Section C and Appendix 5, would require specific structure pairs with the most severe visual impacts to be moved farther from residences, reducing the severity of the visual impact. The effects of this alternative are presented in Section D.18.4.1.

KOP 9 – Cedar Hollow Road in the City of Beaumont. Figure D.18-16A presents a life-size scale view to the southwest from Cedar Hollow Road, just west of Cherry Avenue, toward the Proposed Project in Segment 4 as it passes through the northern residential areas in the City of Beaumont. Three transmission lines are prominently visible in the ROW. Figure D.18-16B presents a visual simulation of replacement of the three existing transmission lines with two facilities. Given the unobstructed sightlines, adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from north of, within, and from most locations (roads and residences) south of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. From some viewing locations south of the ROW, however, the structures would appear more visually prominent due to their concentration in the southern half of the ROW (see the discussion above under *Residential Views Adjacent and to the South of the ROW in the Beaumont Area*).

Similar to KOPs 6, 7, and 8, in the context of the existing towers and lines, the new facilities would exhibit Reduced visual contrast when viewed from north of the ROW (KOP 9), within the ROW, and from most locations south of the ROW. From some residences bordering the south side of the ROW (approximately 36 percent of the south side residences), Proposed Project-induced visual contrast would appear Moderate, while from a more limited number of residential views south of the ROW and adjacent to a proposed structure pair (approximately 16 percent of the south-side residences), visual contrast would appear High. From all residences, the Proposed Project would appear as a foreground, Co-dominant feature relative to the scale of the existing landscape features (and transmission lines). The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (sky, and mountains) would be Reduced when viewed from north of the ROW (KOP 9), within the ROW, and from most locations south of, the ROW. View blockage would be Low to Moderate when viewed from some residences south of the ROW and Moderate to High when viewed from a more limited number of south-side residences adjacent to a structure pair.

The overall visual change would be Improved when viewed from north of the ROW (KOP 9), within the ROW, and from most locations south of the ROW. Overall visual change would appear Moderate when viewed from some residences south of the ROW and Moderate to High when viewed from a smaller percentage of south side residences that are located adjacent to a proposed new structure pair. In the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effects would be Improved when viewed from the approximately 65 percent of affected residences located north of the ROW, within the ROW, and from most locations south of the ROW. The visual effects would be less than substantial for about 25 percent of the residences south of the ROW due to their locations (i.e., not adjacent to proposed new structures). The visual effects would be substantial for approximately 10 percent of south side residences — those located adjacent to a proposed new structure pair. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project. In addition, the Tower Relocation Alternative defined in Section C and Appendix 5, would require specific structure pairs with the most severe visual impacts to be moved farther from residences, reducing the severity of the visual impact. The effects of this alternative are presented in Section D.18.4.1.

KOP 10 – Bluff Street in the City of Banning. Figure D.18-17A presents a life-size scale view to the southeast toward the Proposed Project at the border of Segments 4 and 5, as it passes north of the City of Banning, extending to the east across Morongo Tribal Lands. The view encompasses the western end of Segment 5 as it spans Bluff Street and then passes into the tribal lands north of the City of Banning. The ROW splits at this location with two prominently visible transmission lines following the southern route west, and one transmission line following a northern route. Figure D.18-17B presents a visual simulation of the replacement of three transmission lines with two lines. Given the unobstructed sightlines, travelers on Bluff Street and adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of the three existing transmission lines of different design and size with two taller, double-circuit, tubular steel pole (TSP) facilities of identical design. The new poles would appear more massive and visibly more prominent at greater distance; however, the overall reduction in the number and types of structures would reduce structural complexity in the ROW.

In the context of the existing towers and lines, the new facilities would exhibit Moderate visual contrast and would be foreground, Co-dominant features relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (background sky, hills, and mountains) would be Moderate.

The overall visual change would be Moderate, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project.

KOP 11 – Hathaway Street in the City of Banning. Figure D.18-18A presents a life-size scale view to the northeast toward the Proposed Project across the southwest corner of the Morongo Tribal Lands, from the entrance to the Summit Ridge Apartments on Hathaway Street, in eastern Banning. The view encompasses the ROW as it passes across the corner of the tribal lands, north of I-10, and adjacent to the eastern border of the City of Banning. The San Bernardino Mountains provide a backdrop of visual interest in views to the north and northeast.

Figure D.18-18B presents a visual simulation of two new transmission lines that would be introduced into an area absent such features but with existing wood-pole utility lines present in the foreground of views. Given the relatively unobstructed viewing opportunities of the transmission line corridor and the mountains beyond, travelers on Hathaway Street and adjacent residents would be afforded Extended viewing durations of the Proposed Project. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, two double-circuit TSP transmission lines would be introduced into a foreground landscape presently absent similar features. The TSPs would appear as visually prominent, vertical structures that would result in Moderate to High visual contrast. The TSPs would appear Co-dominant in scale with the more distant background mountains. View blockage of the background sky, hills, and mountains would be Moderate to High. The overall visual change would be Moderate to High, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects. These severe visual effects could be reduced if the proposed new structures were located about 500 feet farther east. However, as described in Appendix 5, Section 5.7, the structures are located on Morongo Tribal Lands, and the Morongo Band of Mission Indians is not willing to consider this relocation, so an alternative that would reduce the severity of this impact is not feasible.

KOP 12 – Morongo Community Center. Figure D.18-19A presents a life-size scale view to the southwest toward the Proposed Project route as it passes south of the Morongo Community Center at 13000 Fields Road, north of I-10. The view encompasses a portion of the community center parking lot and the ROW as it passes between the community center and I-10. The ROW contains three transmission lines: two consisting of lattice-steel structures and one consisting of a wood-pole, H-frame line. Figure D.18-19B presents a visual simulation of the replacement of the three existing transmission lines in an existing corridor with two lines in a new east-west corridor farther to the south. Given the relatively unobstructed sightlines, visitors to the community center would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size in an existing corridor with two double-circuit, TSP lines of identical design in a new corridor. The TSPs would be similar in height to the tallest of the existing lattice structures, but they would appear somewhat more massive. They would also appear more numerous when viewed from the community center because the TSPs have shorter conductor spans requiring more structures (19 structure pairs for the Proposed Project versus 11 structure pairs for the existing line). Also, unlike the current ROW alignment, the new ROW orientation would result in more structures being visible in the view orientation portrayed in Figures D.18-19A and 19B. However, a similar number of structures would be visible with the current ROW orientation if the view direction was west to northwest.

In the context of the existing towers and lines, the new facilities would exhibit Moderate visual contrast and would collectively constitute a foreground, Co-dominant feature relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (background sky, ridges, and Mount San Jacinto) would be Moderate.

The overall visual change would be Moderate, and in the context of the existing landscape's *Moderate to High* visual sensitivity, the resulting visual impact would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project.

KOP 13 – Haugen-Lehmann Way in the Central Portion of the Community of Whitewater. Figure D.18-20A presents a life-size scale view to the west toward the Proposed Project from Haugen-Lehmann Way, near the intersection with Amethyst Drive, in the central portion of the residential Community of Whitewater. Figure D.18-20B presents a visual simulation of the replacement of three existing transmission lines with two facilities. Given the relatively unobstructed sightlines, adjacent residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, the reduction in the overall number and types of structures would reduce: (1) structural clutter within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.

In the context of the existing transmission facilities, the new facilities would exhibit Reduced visual contrast and collectively constitute a foreground, Co-dominant feature relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, but view blockage of higher value landscape features (background sky, ridges, and mountains) would be Reduced.

The overall visual change would be Improved, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be improved. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended, however, to further enhance the visual effects along this portion of the Proposed Project. In addition, the Tower Relocation Alternative defined in Section C and Appendix 5, would require specific structure pairs with the most severe visual impacts to be moved farther from residences, reducing the severity of the visual impact. The effects of this alternative are presented in Section D.18.4.1.

KOP 14 – Pacific Crest Trail Trailhead and Parking Lot. Figure D.18-21A presents a life-size scale view to the south toward the Proposed Project from the PCT trailhead and parking lot, approximately 1 mile north of Haugen-Lehmann Parkway and the Community of Whitewater. Figure D.18-21B presents a visual simulation of the replacement of three existing transmission lines with two facilities. Given the relatively unobstructed sightlines, adjacent travelers on the PCT would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines (when viewed from certain locations along the PCT), atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The new structures would be more noticeable from the PCT due to their greater heights and light-gray steel color compared to the weathered, darker colors of the existing transmission line structures. However, the reduction in the overall number and types of structures would reduce: (1) structural clutter within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features (desert plain, Mount San Jacinto, other background mountains and ridges, and sky — from closer viewing positions on the trail).

In the context of the existing transmission facilities, the new facilities would exhibit Low visual contrast, primarily associated with the vertical form and line of the structures and the color contrast of the light-gray steel against the darker colors of the background vegetation and landforms. In the context of the massive background form of Mount San Jacinto, the new line would appear Subordinate in scale. The resulting view blockage of higher value landscape features (background desert plain, mountains and ridges, and sky) would be Low and similar to the existing facilities. The new structures with their lighter-gray color would attract the attention of the casual observer.

The overall visual change would be Low, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project as viewed from the PCT.

BLM-managed Land Between Haugen-Lehmann Way and Whitewater Canyon. Views of the relatively short (approximately 1 mile long) segment of BLM-managed land crossed by the Proposed Project, located between Haugen-Lehmann Way on the west and Whitewater Canyon on the east, are primarily limited to I-10 and the I-10 rest stop immediately to the south. Given the openness of the terrain and the unobstructed sightlines, travelers on I-10 would be exposed to Extended viewing durations of the transmission line. Also, given the close proximity and relatively large scale of the transmission line, atmospheric conditions would have minimal effect on the viewing experience.

The Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. While the new structures would be slightly more visible from I-10 (due to their greater heights and light-gray steel color), the reduction in the overall number and types of structures would reduce: (1) structural clutter within the ROW, (2) asynchronous spans, and (3) overall industrial character. As a result, the new structures would not attract the attention of the casual observer.

In the context of the existing transmission facilities to be replaced, the new facilities would exhibit Weak form and line contrast at most (refer to Table Ap.10-3 in Appendix 10). The colors of the existing landscape are a blend of medium tans and browns for desert soils and rocks and muted tans and greens for vegetation. Therefore, within the context of the existing landscape colors and textures, the new structures would cause at most a *Moderote* level of color contrast, primarily as a result of the juxtaposition of the light-gray steel of the new structures against the darker colors of the background vegetation and landforms (refer to Table Ap.10-3 in Appendix 10). The smooth-surfaced structures would also cause at most a Weak level of texture contrast when compared to the matte to coarse textures of the natural vegetation and landforms. The resulting view blockage of higher value landscape features (background desert slopes and ridges and sky) would be Low and similar to the existing facilities, and the resulting overall level of visual change would be Low.

While the Proposed Project would have a Low level of visual change and would: (a) repeat the characteristics of the existing three lattice tower transmission lines that it would replace; (b) improve the characteristics of this portion of the ROW by reducing the ROW's structural complexity, industrial character, and associated visual contrast; and (c) introduce replacement structures that would not dominate the view of, nor attract the attention of, the casual observer, it would not repeat the basic elements of the existing natural features in the landscape, as required by the VRM Class II Management Objective which is:

> *...to retoin the existing chorocter of the londscope. The level of chonge to the chorocteristic londscope should be low. Monogement octivities moy be seen but should not ottroct the ottention of the cosuol observer. Any chonges must repeot the bosic elements of form, line, color, ond texture found in the predominont noturol features of the chorocteristic londscope.*

This inconsistency, however, is not considered substantial given the structural context that is already established with the existing multi-facility transmission line corridor and the adjacent wind energy facilities (wind turbines) through which much of this route segment passes. Furthermore, the location of the Proposed Project within an existing utility corridor and replacement of three transmission lines of different design with two new lines of identical design, ensures that sensitive values are not significantly diminished, which would likely occur if this portion of Segment 6 were sited as a stand-alone facility in a separate corridor.

This viewpoint analysis is considered representative of Proposed Project views from I-10 and the rest stop along I-10. Even though this inconsistency with the VRM Class II Management Objective is not considered substantial, Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project on BLM-managed land, as viewed from I-10.

KOP 15 – Whitewater Canyon Road, South of Bonnie Bell. Figure D.18-22A presents a life-size scale view to the southeast toward the Proposed Project route, at the east rim of Whitewater Canyon, from Whitewater Canyon Road, south of Bonnie Bell (a residential enclave in the Community of Whitewater). The view encompasses a portion of the ROW in Segment 6 as it spans Whitewater Canyon and Whitewater Canyon Road. The ROW contains three transmission lines of different design and size, which are visible on the canyon rim from Whitewater Canyon Road. Figure D.18-22B presents a visual simulation of the replacement of the three existing transmission lines with two facilities. Given the relatively unobstructed sightlines, travelers on Whitewater Canyon Road and residents would be afforded Moderate to Extended viewing durations of the new facilities in the ROW. Also, given the relatively close proximity of the transmission lines (viewing distance of approximately 0.7 miles), atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear slightly more visually prominent to travelers on Whitewater Canyon Road. However, there would be a reduction in the number and types of structures, which would slightly reduce visible structural complexity and asynchronous conductor spans.

In the context of the industrial forms of the existing electric transmission structures and wind turbines, the new facilities would exhibit Low visual contrast and would be foreground, Co-dominant features relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, but view blockage of higher value landscape features (background sky and Mount San Jacinto) would be Low (and similar to the existing facilities).

The overall visual change would be Low, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project.

KOP 16 – Painted Hills Road in the Community of Whitewater. Figure D.18-23A presents a life-size scale view to the south-southeast toward the Proposed Project at the eastern end of Segment 6, from Painted Hills Road, just east of Country View Road, in the eastern portion of the Community of Whitewater, immediately west of SR 62. The view encompasses the eastern portion of the Segment 6 ROW as it passes the easternmost portion of the Community of Whitewater, before spanning SR 62, and then continuing east to Devers Substation just east of SR 62. The ROW contains three transmission lines, although they are somewhat obscured by the complexity of the background wind turbines and transmission lines. Figure D.18-23B presents a visual simulation of replacement of three existing transmission lines with two facilities. Given the unobstructed sightlines, residents would be afforded Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would appear slightly more visually prominent due to the greater structural heights. However, the overall structural complexity within the ROW would be slightly reduced, though it would not be readily apparent given the existing structural complexity of the background and adjacent landscape.

In the context of the industrial forms and lines of the existing electric transmission structures and wind turbines, the new facilities would exhibit Low visual contrast and would appear as foreground, Co-dominant features relative to the scale of the existing landscape features. The structures would minimally attract the attention of the casual observer, and view blockage of higher value landscape features (background sky, ridges, and Mount San Jacinto) would be Low.

The overall visual change would be Low to Moderate, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project.

KOP 17 – Southbound State Route 62 Scenic Highway. Figure D.18-24A presents a life-size scale view to the southeast toward the Proposed Project span of SR 62, from southbound SR 62, just north of the span. The view encompasses the eastern portion of the Segment 6 ROW as it spans SR 62, an Officially Designated State Scenic Highway, and then continues east to the Devers Substation just east of SR 62. The ROW contains three transmission lines, although they are somewhat obscured by the complexity of the background wind turbines and transmission lines. Figure D.18-24B presents a visual simulation of replacement of three existing transmission lines with two facilities. Given the unobstructed sightlines, travelers on SR 62 would be afforded Moderate to Extended viewing durations of the new facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission lines, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. While there would be a reduction in the structural complexity in the ROW, the taller structures would appear slightly more visually prominent and would cause slightly greater view blockage of higher value background features.

In the context of the industrial forms of the existing electric transmission structures and wind turbines, the new facilities would exhibit Low visual contrast and would appear as foreground, Co-dominant features relative to the scale of the existing landscape features. The structures would attract the attention of the casual observer, and view blockage of higher value landscape features (Mount San Jacinto) would be Low to Moderate.

The overall visual change would be Low to Moderate, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along this portion of the Proposed Project.

KOP 18 – Northbound Iowa Street in the City of Redlands. Figure D.18-25A presents a life-size scale view to the north along the Iowa Street, near the southwest corner of the Cottage Lane residential subdivision, south of Orange Avenue and North of Barton Road in the City of Redlands. The view encompasses a portion of the Proposed Project SB-Redlands-Tennessee overhead 66 kV subtransmission line as it passes immediately west of the Cottage Lane residential subdivision. There are no other substantial overhead utility structures apparent in the suburban landscape along this portion of Iowa Street. Figure D.18-25B presents a simulation of a new 66 kV subtransmission line in this suburban neighborhood.

As shown in the simulation, the Proposed Project would result in the introduction of a light-weight, steel-pole, 66 kV subtransmission line into a residential suburban landscape presently absent similar features. The light-weight steel poles would appear as visually prominent, vertical structures along the east side of Iowa Street adjacent to the Cottage Lane residential subdivision. The resulting visual contrast would be Moderate to High, and the light-weight steel poles would appear Co-dominant in scale with the more distant background mountains. View blockage of the mountains and sky would be Moderate to High.

The overall visual change would be Moderate to High, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be substantial. Even with successful implementation of Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) the resulting effect would remain substantial. Because there is no mitigation that would adequately reduce the severity of this effect, an alternative has been developed to require that the subtransmission line be installed underground in a portion of the Iowa Street segment. The Iowa Street 66 kV Underground Alternative is described in Section C and Appendix 5 (Section 4.3), and the visual resources impact analysis is presented in Section D.18.4.2.

FAA Marker Requirements

FAA spherical markers ("marker balls") are used to identify certain spans of overhead wires (conductors) as aviation hazards. Conductor spans requiring three or fewer markers use equally spaced orange markers. Spans requiring more than 3 markers use markers with an alternating color scheme consisting of orange, white, and yellow. Based on a preliminary analysis, SCE has estimated the following number of potential spans requiring markers:

- Segment 1 – no spans
- Segment 2 – 14 spans
- Segment 3 – 46 spans
- Segment 4 – 22 spans
- Segment 5 – 2 spans
- Segment 6 – 10 spans

These numbers are preliminary, and the actual number and location of spans needing markers will not be certain until final engineering is completed and the FAA conducts its hazard analysis.

Two representative visual simulations were prepared to illustrate the addition of FAA markers to conductor spans. Figure D.18-9C presents a visual simulation of the Proposed Project with alternating colored markers as viewed from KOP 2 on Canyon Vista Drive in Segment 2. Figure D.18-11C presents a visual simulation of the Proposed Project with short spans of orange-only markers and a longer span of alternating colored markers as viewed from KOP 4 on San Timoteo Canyon Road in Segment 3.

The addition of markers to conductor spans would increase the visual contrast of the Proposed Project against the existing setting. The existing transmission lines have no marker balls, but FAA requirements are now stricter. The incremental change attributable to the markers, while visually adverse, would not be substantial given the existing structural context along the transmission line corridor (and ROW). The visual changes result from replacement of existing transmission line structures and the reduced number of structures overall. The overall visual effects of the Proposed Project with the marker balls would be less than substantial in most viewing cases. Therefore, no specific mitigation is proposed.

Linear Viewpoint Analyses

The following paragraphs discuss the Proposed Project effects on transient linear views along three major roads in the Proposed Project area including I-10, SR 62, and San Timoteo Canyon Road.

I-10 Linear Viewpoint Analysis. Section D.18.1.1.4 and Figures D.18-7A and 7B presented a linear viewpoint analysis for I-10, which is the major travel corridor in the Proposed Project study area. As noted in that analysis, unlike stationary KOP views, transient views while traveling along roadways are variable and constantly change depending on viewing angles, the presence of intervening screening, and even rate of travel speed. The following paragraph briefly encapsulates the overall effect on views from both the eastbound and westbound directions of travel on I-10.

The linear viewpoint analysis covered I-10 from its intersection with I-15 in the west (Segment 1) to just east of SR 62 in the east (Segment 6). As noted in the analysis, the Proposed Project would not appear visibly dominant at any time when viewed from I-10 and would be prominently visible for only approximately five percent of the combined eastbound/westbound travel distance. As shown in Figures D.18-7A and 7B, these areas of prominence only occur for very short distances as the Proposed Project either converges on and parallels, or spans I-10. The majority of these locations occur within existing corridors containing multiple transmission lines. Therefore, given the existing structural context, the minimal affected travel distance, and the relatively limited view duration during project prominence (less than four minutes combined for both eastbound and westbound viewing directions), the visual effect on views from I-10 is not considered substantial. However, as with the stationary KOPs, Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along I-10.

SR 62 Linear Viewpoint Analysis. Section D.18.1.1.4 and Figure D.18-7B presented a linear viewpoint analysis for SR 62, which is a major travel corridor at the easternmost end of the Proposed Project study area and is spanned by Segment 6. The analysis covered SR 62 from its southern intersection with I-10 to approximately 3 miles north of the intersection and just south of Pierson Boulevard. As noted in the analysis, the Proposed Project would not appear visibly dominant at any time when viewed from SR 62 and would be prominently visible for less than one minute of the combined northbound/southbound travel time. As shown in Figures D.18-7B, the areas of prominence only occur for very short distances as drivers approach the span over the highway. Also, the span occurs within an existing corridor, which contains multiple transmission lines. Therefore, given the existing structural context, the minimal affected travel distance, and the relatively limited view duration during project prominence (less than one minute combined for both northbound and southbound viewing directions), the visual effect on views from SR 62 is not considered substantial. However, as with the stationary KOPs, Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along SR 62.

San Timoteo Canyon Road Linear Viewpoint Analysis. Section D.18.1.1.4 and Figure D.18-7C presented a linear viewpoint analysis for San Timoteo Canyon Road, which is a major travel corridor along Segment 3 in the western portion of the Proposed Project study area. The analysis covered San Timoteo Canyon Road from Barton Road in the north to just north of Palmer Avenue in the south. As noted in the analysis, the Proposed Project would not appear visibly dominant at any time when viewed from San Timoteo Canyon Road but would be prominently visible for approximately 43 percent of the combined northbound/southbound travel distance, or approximately 12 minutes. This represents a substantial portion of this route segment. As shown in Figure D.18-7C, the areas of visual prominence occur primarily in the southern half of the route segment where it closely parallels the south side of San Timoteo Canyon Road. However, this portion of the route would be located within an existing transmission line corridor containing multiple transmission lines. Because three of the existing lines would be replaced with the two new lines, the overall structural landscape and visual change within the ROW would be improved over the existing conditions. Therefore, given the existing structural context and anticipated improved visual change, the Proposed Project's visual effect on views from San Timoteo Canyon Road is not considered substantial. However, similar to the stationary KOPs, Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) are recommended to reduce the visual effects along San Timoteo Canyon Road.

Mitigation Measure for Impact VR-8: Long-term presence of the project would result in landscape changes that degrade existing visual character or quality

VR-8a **Minimize visual contrast in project design.** In the final design of approved project structures, SCE shall use design fundamentals that reduce the visual contrast of new structures and components to the characteristic landscape. These include siting and location; reduction of visibility; repetition of form, line, color, and texture of the landscape; and reduction of unnecessary disturbance. SCE shall provide to the CPUC and BLM for review, a draft Project Design Plan describing the siting, placement, and other design considerations to be employed to minimize Proposed Project contrast. The draft plan must explain how the design will minimize visual intrusion and contrast by blending the earthwork, vegetation manipulation, and facilities with the landscape. Design strategies to address these fundamentals shall be based on the following factors.

- **Earthwork.** Select locations and alignments that fit into the landforms to minimize the sizes of cuts and fills.
- **Vegetation Manipulation.** Use existing vegetation to screen graded areas and facilities from public viewing to the extent feasible. Feather and thin the edges of cleared areas and retain a representative mix of plant species and sizes.

- **Reclamation and Restoration.** Blend the disturbed areas into the characteristic landscape including access and spur roads and disturbed areas created during construction (transmission line structures, and construction yards and staging areas). Replace soil, brush, rocks, and natural debris over these disturbed areas. Newly introduced plant species shall be of a form, color, and texture that blend with the landscape.

The Project Design Plan shall be submitted to CPUC and BLM at least 60 days prior to the start of construction. If the CPUC or BLM notify SCE that revisions to the plan are needed before the plan can be approved, within 30 days of receiving that notification, SCE shall submit a revised plan. Once the plan is made final, SCE shall provide a copy as a courtesy to the incorporated cities and county jurisdictions through which the project passes.

Impact VR-9: Project operation would create a new source of reflected light and glare

Operational Lighting. PEA Section 3.1.1.3 (Substation Lighting) describes 10 to 30 new permanent lights that would be required as a result of the Proposed Project. Therefore, even though these new lights would be at existing substations with already existing lighting, these lights could be distracting to motorists or pedestrians (see KOP discussions above). Also, some O&M activity could take place at night, which could result in substantial adverse night lighting visual effects. However, the potential glare and visual contrast effects associated with night lighting can be reduced and managed through the implementation of Mitigation Measure VR-7a (Minimize night lighting at project facilities).

FAA Lighting Requirements. SCE anticipates that FAA hazard lighting would be required for approximately 10 structure pairs in Segment 5, extending from the quarry area in the northeast corner of Banning to the southwest corner of the Morongo Tribal Lands. Although there is currently no night lighting within this portion of Segment 5, there are other noticeable night lighting sources in the vicinity including: (1) two FAA hazard lights (one flashing and one static) on communication towers in downtown Banning; (2) four static hazard lights on the Banning High School light standards to the southwest; (3) the substantial night lighting associated with the Morongo Casino complex to the east (the most dominant night light source in the San Gorgonio Pass); (4) numerous vehicle lights on I-10; (5) numerous flashing FAA hazard lights on wind turbines on the south side of I-10 in the Cabazon area; and (6) several static FAA hazard lights on 500 kV transmission structures along the base of the pass' southern ridge. Given the established night lighting context in the immediate vicinity of Segment 5, the resulting visual effect from the addition of FAA Hazard lights is not expected to be substantial, and no specific mitigation is proposed.

Steel Structure Glare and Reflectivity. Components of new steel transmission structures can be reflective and highly visible in sunlight, even creating distractions to motorists and nearby residents. Therefore, the long-term presence of the Proposed Project could create a new source of reflective glare and surface color contrast that could adversely affect daytime views along much of the Proposed Project route. However, the visibility and reflectivity of new structures can be minimized with various surface treatments. Mitigation Measure VR-9a (Treat structure surfaces) is recommended to minimize the views of these facilities.

Mitigation Measure for Impact VR-9: Project operation would create a new source of reflected light and glare

VR-9a **Treat structure surfaces.** SCE shall treat the surfaces of all structures and new buildings visible to the public such that: a) their colors minimize visual contrast by blending with the characteristic landscape colors; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. The transmission structures and conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive. SCE shall consider the use of special galvanizing treatments or post-manufacture application of chemical treatments (such as Natina Steel) to ensure that transmission structures are sufficiently dulled and non-reflective and are of the appropriate color to blend effectively with the surrounding landscape. SCE shall comply with CPUC and BLM requirements regarding appropriate surface treatments for Proposed Project elements.

SCE shall provide to the CPUC and BLM for review, a draft Surface Treatment Plan describing the application of colors and textures to all new facility structures, buildings, walls, fences, and components comprising all facilities to be constructed. The draft Surface Treatment Plan must explain how the design will reduce glare and minimize visual intrusion and contrast by blending the facilities with the landscape. The draft plan shall be submitted to CPUC and BLM at least 60 days prior to ordering the first structures that are to be color-treated during manufacture or prior to construction of any of the facility components, whichever comes first. If the BLM or CPUC notifies SCE that revisions to the plan are needed before the plan can be approved, within 30 days of receiving that notification, SCE shall prepare and submit for review and approval a revised plan. The draft Surface Treatment Plan shall include the following components and specifications.

- Specification, and 11" x 17" color simulations at life-size scale, of the treatment proposed for use on structures, including structures treated during manufacture.
- A list of each major structure, building, tower and/or pole, and fencing specifying the color(s) and finish(es) proposed for each (colors must be identified by name and by vendor brand or a universal designation).
- Two sets of brochures and/or color chips for each proposed color.
- A detailed schedule for completion of the treatment.
- A procedure to ensure proper treatment maintenance for the life of the Proposed Project.
- Until SCE receives notification of approval of the Surface Treatment Plan by the CPUC and BLM, SCE shall not specify to the vendors the treatment of any buildings or structures for manufacture and shall not perform the final treatment on any buildings or structures treated on site. Additionally, construction activities shall not start until approval of the plan from the CPUC and BLM has been received. Within 14 days following the completion of treatment on any facility component, SCE shall notify the CPUC and BLM that the component (e.g., structure or building) is ready for inspection.

D.18.3.4 Impacts of Connected Actions

Visual impacts of connected actions are evaluated more broadly than the Proposed Project, though all impacts defined for the Proposed Project are still considered in the connected action analysis. Construction impacts are all assessed in Impact VR-1C and operational impacts are all covered in Impact VR-8C.

Impact VR-1C: Construction would result in adverse visual effects due to the presence of equipment, vehicles, materials, and workforce, or use of night lighting

Desert Center Area. Connected actions in the Desert Center area would include the EDF Desert Harvest Solar Project (solar photovoltaics, or PV), the Palen Solar Power Project (solar trough), and two confidential and undefined solar PV projects. Construction activities associated with these connected actions would be similar to those described above for the Proposed Project in Section D.18.3.3 and would include the visual intrusion of construction vehicles, equipment, materials, and workforce into the predominantly natural appearing landscape as well as the possible use of night lighting. Construction would include site clearing and grading, construction of the actual facilities, and site cleanup and restoration. Grading activities have the potential to generate dust clouds, which can be visually distracting if not controlled properly. Depending on the project and location, construction activities would be potentially visible from I-10, SR 177, Kaiser Road, other local access and recreation roads, the commercial area at Desert Center, the Lake Tamarisk residential area, ACECs, and the elevated vantage points in the surrounding mountains, ridges, Joshua Tree National Park, and wilderness areas.

Throughout the construction periods for these projects, the industrial character of the activities and visible contrast associated with substantial ground disturbance and vegetation removal would constitute adverse visual effects. However, the majority of construction activities and equipment and personnel brought onto the project sites would be temporary in nature, including the use of any night lighting during construction. However, if construction of multiple projects were sequenced such that ongoing construction activities in the same viewshed were to extend into several years (typically five or more), the extended time frame of construction would constitute a long-term adverse visual impact.

The connected actions' substantial visual contrast associated with the construction activities can be reduced through the implementation of Mitigation Measures VR-1a (Screen construction activities from view) and VR-7a (Minimize construction night lighting), both described above under the Proposed Project in Section D.18.3.3.

Blythe Area. Connected actions in the Blythe area would include three confidential and undefined solar PV projects. Construction activities associated with these connected actions would be similar to those described above for the Desert Center connected actions and the Proposed Project in Section D.18.3.3 and would include the visual intrusion of construction vehicles, equipment, materials, and workforce into the predominantly natural appearing landscape as well as the possible use of night lighting. Construction would include site clearing and grading, construction of the actual facilities, and site cleanup and restoration. Grading activities have the potential to generate dust clouds, which can be visually distracting if not controlled properly. Depending on the project and location, construction activities would be potentially visible from I-10, four-wheel drive recreational trails, the Blythe Airport area, the Nicholls Warm Springs residential development, and the Mule Mountains to the south and McCoy Mountains to the north. Although limited by a lack of trails or facilities, backcountry recreationists do access the Mule and McCoy mountains and would be afforded elevated viewing perspectives of the Blythe development area during construction.

Throughout the construction periods for these projects, the industrial character of the activities and visible contrast associated with substantial ground disturbance and vegetation removal would constitute adverse visual effects. However, the majority of construction activities and equipment and personnel brought onto the project sites would be temporary in nature, including the use of any night lighting during construction. However, if construction of multiple projects were sequenced such that ongoing construction activities in the same viewshed were to extend into several years (typically five or more), the extended time frame of construction would constitute a long-term adverse visual impact.

The connected actions' substantial visual contrast associated with the construction activities can be reduced through the implementation of Mitigation Measures VR-1a (Screen construction activities from view) and VR-7a (Minimize construction night lighting), both described above under the Proposed Project in Section D.18.3.3.

Impact VR-8C: Long-term presence of the project would result in landscape changes or new sources of light and glare that degrade existing visual character or quality

Desert Center Area. The Desert Center area solar projects include both a solar trough and solar photovoltaic projects. They would result in the introduction of large-scale, industrial appearing facilities and graded surfaces forming a spatially and visually prominent series of geometric patterns on the valley floor. These characteristics would noticeably contrast with the predominantly natural appearance of the northern Chuckwalla Valley landscape and background mountains.

Depending on the location of the viewer on the valley floor, the connected actions could appear centrally located within the field of view and impair views of the valley floor and lower elevations of surrounding mountains. The light-tan color of the graded soils would result in a moderate degree of visual contrast relative to the darker earth-tone colors of the surrounding landforms. From the more elevated vantage points in the surrounding mountains, Joshua Tree National Park, and wilderness areas, the relatively prominent, hard lines associated with the new vegetation demarcations would result in a Moderate degree of line contrast. The prominent geometric patterns of the panel arrays and troughs and vertical elements of interconnecting gen-tie lines would result in Strong form contrast and Moderate to Strong line contrast with the naturally irregular landforms and lines of the existing landscape. The color and reflective characteristics of the various structures would contribute Moderate to Moderate-High color contrast with the existing light tans of the valley soils and darker grey-greens, tans, and reddish hues of the foreground/middleground vegetation and terrain.

The prominent geometric characteristics and structural patterns would not repeat the basic elements of the existing natural features in the landscape (rugged and coarse valley floor punctuated with irregular distributions of vegetation clumps and individuals, backdropped by jagged and angular mountains and ridgelines). The Palen Solar Power Project was also found to have the potential to create a new source of substantial nighttime light during operation that would adversely affect nighttime view and result in daytime glare that would affect views and safety due to the proximity of Highway I-10 (CEC, 2010; Section IV.E). The resulting levels of visual change would range from Moderate-High to High and the overall visual impact would typically be substantial.

The degradation of existing visual character or quality associated with the long-term presence of the connected action and introduction of new sources of light and glare can be reduced somewhat through the implementation of Mitigation Measures VR-7a (Minimize night lighting at project facilities), VR-8a (Minimize visual contrast in project design), and VR-9a (Treat structure surfaces), all of which are described above under the Proposed Project in Section D.18.3.3.

Blythe Area. The Blythe area connected actions (three solar PV projects totaling almost 5,000 acres of development) would result in the introduction of large-scale, industrial appearing facilities and graded surfaces forming a spatially and visually prominent series of geometric patterns on the relatively flat mesa and valley floor. These characteristics would noticeably contrast with the predominantly natural appearance of the eastern Chuckwalla Valley and Palo Verde Mesa landscape and background mountains (McCoy Mountains and Mule Mountains).

Depending on the location of the viewer, the connected actions could appear centrally located within the field of view and impair views of the valley floor and lower elevations of any background mountains. The light-tan color of the graded soils would result in a Moderate degree of visual contrast relative to the darker earth-tone colors of the surrounding landforms. From the more elevated vantage points in the McCoy and Mule Mountains, the relatively prominent, hard lines associated with the new vegetation demarcations would result in a Moderate degree of line contrast. The prominent geometric patterns of the panel arrays and vertical elements of interconnecting gen-tie lines would result in Moderate to Strong form and line contrast with the naturally irregular landforms and lines of the existing landscape, particularly when viewed from static viewpoints such as the Nicholls Warm Springs residential area. The color and reflective characteristics of the various structures would contribute to the Moderate to Moderate-High color contrast with the existing darker tans, grey-greens, and rust hues of the foreground/middle-ground vegetation, soil, and rock features.

The prominent geometric characteristics and structural patterns would not repeat the basic elements of the existing natural features in the landscape (rugged and coarse valley floor punctuated with irregular distributions of vegetation clumps and individuals, backdropped by jagged and angular mountains and ridgelines). The resulting levels of visual change would range from Moderate-High to High depending on viewing location and the overall visual impact would typically be substantial.

The degradation of existing visual character or quality associated with the long-term presence of the connected action and introduction of new sources of light and glare can be reduced somewhat through the implementation of Mitigation Measures VR-7a (Minimize night lighting at project facilities), VR-8a (Minimize visual contrast in project design), and VR-9a (Treat structure surfaces), all of which are described above under the Proposed Project in Section D.18.3.3.

D.18.4 Environmental Impacts of Project Alternatives

D.18.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would be the same as the Proposed Project except in Segments 4, 5, and 6, where it would locate certain transmission structures farther from existing homes. The discussion of this alternative focusses on the differences between the Proposed Project and the alternative.

Nine impacts to visual resources were identified for the Proposed Project. These impacts also would apply as well to the Tower Relocation Alternative. . The full text of all mitigation measures referenced in this section is presented in Section D.18.3.3, except where otherwise noted.

Impact VR-1: Construction would result in adverse visual effects due to the presence of equipment, vehicles, materials, and workforce

Construction of the Tower Relocation Alternative would cause temporary visual effects in Segments 4. 5, and 6 due to the presence of equipment, vehicles, materials, and workforce. The construction process also would require the use of temporary tower structures, called shoo-flies.

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from nearby roads, residential areas, and recreational areas and facilities. Throughout the construction period in Segments 4, 5, and 6, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the Proposed Project vicinity, in general, and the adjacent residences in particular. Because the Tower Relocation Alternative would occur in the same vicinity as the originally proposed tower locations, visual impacts during construction would be similar. Visibility of construction activities and equipment (including shoo-flies) would be temporary and would not result in a long-term visual impact. This would be the same as for the Proposed Project. The short-term visual contrast associated with the construction of this alternative can be reduced somewhat by implementing Mitigation Measure VR-1a (Screen construction activities from view; see Section D.18.3.3 above).

Impact VR-2: Construction would result in visual contrast due to vegetation removal

Areas of ground disturbance and vegetation removal (resulting in contrasts in color, line, and texture) would remain visible from various vantage points for an extended period after the end of construction activities. Revegetation in arid and semi-arid areas can be difficult and generally has limited success. This would be particularly true in Segment 6 of the Tower Relocation Alternative. Due to the length of time for construction and the slow rate of revegetation growth, the visual contrast could appear prominent from some viewing locations for many years and cause Moderate to High levels of visual change. These substantial visual effects would also be inconsistent with the VRM Class II Management Objective (applicable to BLM-managed land in Segment 6).

However, these visual effects would be the same as for the Proposed Project and, like the Proposed Project, the Tower Relocation Alternative's prominent visual contrast due to vegetation removal can be reduced somewhat by implementing Mitigation Measures VR-2a (Minimize vegetation removal and ground disturbance; see Section D.18.3.3 above) and VEG-1d (Restore or revegetate temporary disturbance areas; see Section D.4, Biological Resources – Vegetation). However, impacts would remain substantial.

Impact VR-3: Construction would result in visual contrast associated with retaining walls, land scarring, and establishment of graveled surfaces

Areas of temporary disturbance, where the soil surface is exposed and/or removed or where lighter-colored gravel is placed, would exhibit considerable color contrast with adjacent areas of darker vegetation and soil. This long-term visual contrast could appear prominent from some viewing locations and cause Moderate to High levels of visual change, which would also be inconsistent with the VRM Class II Management Objective (for BLM land in Segment 6). These visual effects would be the same as for the Proposed Project. The prominent visual contrast associated with land scarring and graveled surfaces can be reduced through by implementing Mitigation Measure VR-3a (Reduce color contrast of retaining walls, land scars, and graveled surfaces — see Section D.18.3.3 above).

Impact VR-4: Construction could result in visual contrast associated with in-line views of retaining walls and land scars

Within Segment 4, a portion of the Tower Relocation Alternative would be located on hillsides or hilltops west of I-10. Construction of the structures and of access and/or spur roads to individual structure sites have the potential to create extended, in-line views of newly graded terrain. These types of views can increase the visibility, prominence, and overall visual contrast of graded surfaces. In this circumstances, the overall level of visual change becomes Moderate to High. This also would occur with the Proposed Project. The potential for prominent visual contrast from in-line views of land scars can be reduced by implementing Mitigation Measure VR-4a (Minimize in-line views of retaining walls, land scars, and graveled surfaces — see Section D.18.3.3 above).

Impact VR-5: Construction could result in visual contrast associated with the marking of natural features

If paint or permanent coloring agents are applied to rocks or vegetation to indicate survey or construction limits or to provide direction, these markings can result in long-term visible color contrast and substantial visual change. This also would be inconsistent with the VRM Class II Management Objective (for BLM-managed land in Segment 6). This potential visual impact would be the same as for the Proposed Project. The visual contrast due to marking of natural features can be avoided through the implementation of Mitigation Measure VR-5a (Prohibit construction marking of natural features — see Section D.18.3.3 above).

Impact VR-6: Construction could result in visual contrast associated with fugitive dust, waste, and trash

Grading of specific sites, access roads, and spur roads has the potential to generate dust clouds, resulting in visual contrast that can substantially degrade the quality of a site. Implementation of Mitigation Measure AQ-1a (Control fugitive dust; see Section D.3, Air Quality) can reduce this impact. During construction, there also is the potential for trash and other waste to be discarded inappropriately at construction sites. It then can be transported by wind and/or animals across the landscape, creating additional visual contrast and degrading the landscape quality and character. Implementing Mitigation Measure WIL-1b (Ensure wildlife impact avoidance and minimization) can reduce this impact. Both of these effects would be the same as for the Proposed Project and neither effect would be consistent with the VRM Class II Management Objective (for BLM-managed land in Segment 6).

Impact VR-7: Construction could result in the use of night lighting or installation of reflective surfaces, which could cause undesirable night light and glare effects

It is possible that some construction would take place at night. This could result in substantial adverse visual effects from night lighting. There is a general lack of existing night lighting along portions of Segment 4 and much of Segments 5 and 6. There also is the potential for daytime or nighttime glare reflecting off transmission structures that could cause undesirable effects. Such visual conditions would be inconsistent with the VRM Class II Management Objective (for BLM land in Segment 6). These visual effects would be the same as for the Proposed Project. The potential glare and night lighting effects of the Tower Relocation Alternative can be reduced and managed by implementing Mitigation Measures VR-7a (Minimize night lighting at project facilities) and VR-9a (Treat structure surfaces) as previously described in Section D.18.3.3.

Impact VR-8: Long-term presence of the project would result in landscape changes that degrade existing visual character or quality

The perceived long-term visual changes resulting from the alternative would be associated with new towers, conductors, and FAA hazard markers.

While the structural elements of the Tower Relocation Alternative are the same as for the Proposed Project, the location of some of those elements is different. With the Proposed Project, some new tower centerlines in Segment 4 (Beaumont and Banning), Segment 5 (Banning), and Segment 6 (Whitewater and Devers) would be approximately 50 feet from the edge of the ROW. This would be closer to residences along the south side of the ROW than the existing structures (see Table Ap.5-1 and Figures Ap.5-3a through Ap.5-3i). In some cases, the structures and/or conductors would appear to be immediately adjacent to residential property lines. As a result, the increased visual contrast, prominence, and view blockage associated with the proximity of the structure pairs would result in a Moderate to High degree of visual change, which would constitute a substantial visual effect under the Proposed Project (see the Proposed Project discussion of KOP 6A in Section D.18.3.3 (Impacts and Mitigation Measures above).

By relocating various tower pairs approximately 50 feet to the north of the Proposed Project tower locations in Segments 4, 5, and 6, the Tower Relocation Alternative would produce a somewhat less severe visual impact compared to the Proposed Project. The relocations are shown in Figures Ap.5-3a through Ap.5-3i. By shifting the proposed structures farther away from the closest residences, the Tower Relocation Alternative structures would appear more similar to the existing structure locations. This would result in slightly less visual change than the change that would result from the Proposed Project. Depending on the residential viewing location, the resulting visual contrast under this alternative would range from Moderate-to-High to High, while project dominance would range from Co-Dominant to Dominant.

View blockage would generally be Moderate when viewed from all locations., When viewed from some residences to the south of the ROW, the visual change would be Moderate to High, similar to that of the Proposed Project. However, from other residences located approximately 75 to 100 feet from the pair of structures, the shift under the Tower Relocation Alternative would sufficiently reduce the looming over-head structural presence. The resulting overall visual change would appear less substantial (Moderate) as compared to the Proposed Project, particularly when viewed from the back yards of affected residences.

Impact VR-9: Project operation would create a new source of reflected light and glare

Under the Tower Relocation Alternative, operational lighting at substations and night lighting from O&M activities along the ROW would be the same as that for the Proposed Project, resulting in potentially substantial adverse night lighting visual effects. However, the potential glare and visual contrast effects associated with night lighting can be reduced and managed by implementing Mitigation Measure VR-7a (Minimize night lighting at project facilities), as discussed in Section D.18.3.3 above.

Glare and reflectivity from steel structures and surface color contrast would be the same as the Proposed Project and can similarly adversely affect daytime views along much of the route in Segments 4, 5, and 6. This can create distractions to motorists and nearby residents. However, the visibility and reflectivity of new structures can be minimized with various surface treatments. Mitigation Measure VR-9a (Treat structure surfaces — see Section D.18.3.3 above) would reduce the apparent structure contrast and reflectivity.

D.18.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of 66 kV line underground, rather than overhead. This would alter the Proposed Project only in this geographic area.

Impacts VR-2 through VR-6 and VR-8 and VR-9

Nine impacts were identified under the Proposed Project for visual resources. Of those 9 impacts, 7 impacts would not occur in the vicinity of the Iowa Street 66 kV Underground Alternative. This is because placement of the 66 kV line underground along an existing paved road in an urban setting would have few long term visual effects. The impacts that would not occur include:

- Impact VR-2: Construction would result in visual contrast due to vegetation removal
- Impact VR-3: Construction would result in visual contrast associated with retaining walls, land scarring, and establishment of graveled surfaces
- Impact VR-4: Construction could result in visual contrast associated with in-line views of retaining walls and land scars
- Impact VR-5: Construction could result in visual contrast associated with the marking of natural features
- Impact VR-6: Construction could result in visual contrast associated with fugitive dust, waste, and trash
- Impact VR-8: Long-term presence of the project would result in landscape changes that degrade existing visual character or quality
- Impact VR-9: Project operation would create a new source of reflected light and glare

The remaining 2 impacts (VR-1 and VR-7) would occur.

Impact VR-1: Construction would result in adverse visual effects due to the presence of equipment, vehicles, materials, and workforce

Similar to the Proposed Project, construction of the Iowa Street 66 kV Underground Alternative would cause temporary visual effects due to the presence of equipment, materials, and workforce. Construction activities along Iowa Street would include site clearing, trenching, installation of facilities, site cleanup, and paving. Construction activities would be visible from adjacent local roads including Iowa Street, Barton Road, and Orange Avenue. Construction activities also would be visible from commercial and residential uses along Iowa Street, including the Cottage Lane residential subdivision. During construction, the industrial nature of the activities would cause substantial visual contrast and visual change and would constitute adverse visual effects when viewed from the immediate project vicinity.

However, visibility of construction activities and equipment would be temporary and would not result in a substantial, long-term visual impact, which would be the same as for the Proposed Project. The substantial visual contrast associated with the construction of this alternative can be reduced by implementing Mitigation Measure VR-1a (Screen construction activities from view; see Section D.18.3.3 above).

Impact VR-7: Construction could result in the use of night lighting or installation of reflective surfaces, which could cause undesirable night light and glare effects

Some construction activity may take place at night, which could result in substantial adverse night lighting visual effects should it occur adjacent to the Cottage Lane residential subdivision. This visual effect would be the same as for the Proposed Project and can be reduced and managed by implementing Mitigation Measure VR-7a (Minimize night lighting at project facilities) as previously described in Section D.18.3.3.

D.18.4.3 Phased Build Alternative

The Phased Build Alternative would occur along the entire ROW. It would retain the existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double 220 circuit structures, and string all structures with new higher-capacity conductors.

Nine impacts to visual resources were identified for the Proposed Project. These impacts would apply to the Phased Build Alternative as well. The alternative would be located in the same corridor as the Proposed Project and would result in a similar number of structures as the Proposed Project. However, construction-period visual adverse effects would be less severe due to the reduction in construction activities that would result from retaining some structures rather than removing and replacing them. The full text of all mitigation measures referenced in this section is presented in Section D.18.3.3, except where otherwise noted.

Impact VR-1: Construction would result in adverse visual effects due to the presence of equipment, vehicles, materials, and workforce

Construction of the Phased Build Alternative would cause temporary visual effects similar to the Proposed Project due to the presence of equipment, vehicles, materials, and workforce. The construction process also would require use of temporary tower structures, called shoo-flies. However, overall adverse visual effects from construction activities would be reduced because one set of double-circuit structures would be retained rather than replaced. Demolition and construction associated with tower replacements would be required at many locations.

Construction activities would include site clearing and grading, demolition and erection of structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from I-10, SR 243, nearby local roads, nearby residential areas, and recreational areas and facilities. During construction, the industrial character of the activities would cause substantial visual contrast and visual change. This would result in adverse visual effects when viewed from the project vicinity.

Visibility of construction activities and equipment (including shoo-flies) would be temporary in nature and would not result in a substantial long-term visual impact. This would be the same as for the Proposed Project in terms of the nature of the impact. This alternative would reduce the overall construction activity and the associated short-term visual adverse effect. The substantial short-term visual contrast associated with the construction of this alternative can be further reduced by implementing Mitigation Measure VR-1a (Screen construction activities from view; see Section D.18.3.3 above).

Impact VR-2: Construction would result in visual contrast due to vegetation removal

Areas of ground disturbance and vegetation removal (resulting in contrasts in color, line, and texture) would remain visible from various vantage points for an extended period after the end of construction activities. Revegetation in arid and semi-arid areas can be difficult and generally has limited success. This would be particularly true in Segment 6 of the Tower Relocation Alternative. This adverse effect would be less severe in this alternative due to the reduction in ground disturbance. However, due to the length of construction and the slow rate of revegetation growth, the visual contrast created could appear prominent from some viewing locations for many years and cause Moderate to High levels of visual change. These substantial visual effects would also be inconsistent with the VRM Class II Management Objective (applicable to BLM-managed land in Segment 6).

These visual effects would be similar to the Proposed Project. Like the Proposed Project, the Phased Build Alternative's prominent visual contrast associated with vegetation removal can be reduced somewhat by implementing Mitigation Measures VR-2a (Minimize vegetation removal and ground disturbance — see Section D.18.3.3 above) and VEG-1d (Restore or revegetate temporary disturbance areas; see Section D.4, Biological Resources – Vegetation). However, impacts would remain substantial.

Impact VR-3: Construction would result in visual contrast associated with retaining walls, land scarring, and establishment of graveled surfaces

Areas of temporary disturbance, where the soil surface is exposed and/or removed or where lighter-colored gravel is placed, would exhibit considerable color contrast with adjacent areas of darker vegetation and soil. Less ground disturbance would occur in this alternative, which would reduce the severity of this adverse effect. This long-term visual contrast could appear prominent from some viewing locations and cause Moderate to High levels of visual change, which would also be inconsistent with the VRM Class II Management Objective (for BLM land in Segment 6). These visual effects would be similar to the Proposed Project. The prominent visual contrast associated with land scarring and graveled surfaces can be reduced by implementing Mitigation Measure VR-3a (Reduce color contrast of retaining walls, land scars, and graveled surfaces see Section D.18.3.3 above).

Impact VR-4: Construction could result in visual contrast associated with in-line views of retaining walls and land scars

Portions of the Phased Build Alternative would be located on hillsides or hilltops. Construction of structures and of access and/or spur roads to individual structure sites have the potential to create extended, in-line views of newly graded land. These types of views can increase the visibility, prominence, and overall visual contrast of graded surfaces. In these circumstances, the overall level of visual change becomes

Moderate to High. This also would occur with the Proposed Project. This adverse effect would be reduced in severity as compared to the Proposed Project due to the smaller amount of ground disturbance and potentially fewer newly graded spur roads. The potential for prominent visual contrast associated from in-line views of land scars can be reduced by implementing Mitigation Measure VR-4a (Minimize in-line views of retaining walls and land scars — see Section D.18.3.3 above).

Impact VR-5: Construction could result in visual contrast associated with the marking of natural features

If paint or permanent coloring agents are applied to rocks or vegetation to indicate survey or construction limits or to provide direction, such markings can result in long-term visible color contrast and substantial visual change. This also would be inconsistent with the VRM Class II Management Objective (for BLM-managed land in Segment 6). This potential visual impact would be similar to the Proposed Project, but reduced in severity due to the overall reduction in construction activity. The visual contrast due to the marking of natural features can be avoided by implementing Mitigation Measure VR-5a (Prohibit construction marking of natural features — see Section D.18.3.3 above).

Impact VR-6: Construction could result in visual contrast associated with fugitive dust, waste, and trash

Grading of specific sites, access roads, and spur roads has the potential to generate dust clouds, resulting in visual contrast that can substantially degrade the quality of a site. Implementation of Mitigation Measure AQ-1a (Control fugitive dust; see Section D.3, Air Quality) can reduce this impact. During construction, there is the potential for trash and other waste to be discarded improperly at construction sites. It then be spread by wind and/or animals across the landscape, creating additional visual contrast and degrading the landscape quality and character. Implementing Mitigation Measure WIL-1b (Ensure wildlife impact avoidance and minimization) can reduce this impact. Both of these effects would be similar to the Proposed Project and neither effect would be consistent with the VRM Class II Management Objective (for BLM-managed land in Segment 6). However, these adverse effects would be less severe under the Phased Build Alternative than under the Proposed Project because the existing double-circuit structures would be retained and reconductored rather than replaced, thereby requiring less extensive construction-related disturbance.

Impact VR-7: Construction could result in the use of night lighting or installation of reflective surfaces, which could cause undesirable night light and glare effects

It is possible that some construction would take place at night. This could result in substantial adverse visual effects given the general lack of night lighting along portions of the Phased Build Alternative. There also is potential for daytime or nighttime glare reflecting off transmission structures that could cause undesirable effects. Such visual conditions would be inconsistent with the VRM Class II Management Objective (for BLM land in Segment 6). These visual effects would be similar to the Proposed Project, but less severe due to the overall reduction in construction activity and the retention of existing double-circuit structures that have weathered (duller) surfaces compared to new structures. The potential glare and night lighting effects of the Phased Build Alternative can be reduced and managed by implementing Mitigation Measures VR-7a (Minimize night lighting at project facilities) and VR-9a (Treat structure surfaces) as previously described in Section D.18.3.3.

Impact VR-8: Long-term presence of the project would result in landscape changes that degrade existing visual character or quality

The Phased Build Alternative would result in permanent adverse effects related to visual change perceived from sensitive viewing locations including adjacent residences, local roadways, and nearby recreation areas and facilities. The perceived long-term visual changes resulting from the alternative would be associated with new towers, conductors, and FAA hazard markers. The permanent visual changes in this alternative would be substantially reduced due to the retention of the existing set of double-circuit towers.

For some portions of the Proposed Project, the structures and/or conductors would appear immediately adjacent to residential property lines. As a result, the increased visual contrast, structure prominence, and view blockage associated with the proximity of the pairs of structures would result in a Moderate to High degree of visual change, which would constitute a substantial visual effect under the Proposed Project. In contrast, the Phased Build Alternative would produce a less severe visual impact compared to the Proposed Project by retaining the set of existing double-circuit structures near the center of the ROW and constructing one new set of double-circuit structures that generally would be farther from the edge of the ROW (and in all cases no closer to the edge of the ROW) than the northern-most Proposed Project structures. By shifting structures farther from the closest residences and retaining one of the paired existing structures, the Phased Build Alternative structure locations within the ROW that would appear more similar to the existing structure locations. The Phased Build Alternative would also include up to 110 additional interset structures along the retained double-circuit line over the 45-mile corridor length. This would add visual complexity to the ROW in some areas, but the greater distance of the towers to the edge of the ROW remains a substantial visual benefit in the areas where visual impacts of the Proposed Project would be most severe. In addition, if the 66 kV relocation is required in Segment 1, as it is for the Proposed Project, the Iowa Street Underground Alternative would eliminate the visual impacts of the proposed new overhead line along Iowa Street. As a result, the Phased Build Alternative would cause less incremental visual contrast, structure prominence, and view blockage as compared to the Proposed Project when viewed from residential locations along the south side of the ROW.

KOP 6A – Sagura Road in the Solera residential golf community. Figure D.18-26A presents a life-size scale view to the northwest toward the Phased Build Alternative route from Sagura Road, one of the residential streets in the Solera residential golf community and just west of Snowberry Road in the City of Beaumont. The view encompasses a portion of the residential development backing on to the existing ROW to the north containing three partially screened transmission lines. Figure D.18-26B presents a visual simulation showing (a) the retention of the existing double-circuit 220 kV transmission line, (b) the removal of two smaller transmission lines, and (c) the introduction of a new 220 kV transmission line that would occupy the same location as the northern transmission line of the Proposed Project. Given the relatively unobstructed sightlines, adjacent residents would be experience Extended viewing durations of the new and existing facilities in the ROW. Also, given the close proximity and relatively large scale of the transmission line structures, atmospheric conditions would have minimal effect on the viewing experience.

As shown in the simulation, the Phased Build Alternative would result in the replacement of two existing transmission lines of different design with one taller, double-circuit facility with a lattice structure design similar to the transmission line being retained under this alternative. Although the taller structures would cause increased skylining and would appear somewhat more visually prominent, this structural prominence would be partially offset by the structure's more distant (from south side residences) location compared to the smaller transmission line being replaced, which currently is located closer to the southern edge of the ROW. Also, the similar design of the new structures (to the existing 220 kV structures being retained) would lessen structural visual contrast and the overall structural clutter within the ROW caused by three transmission lines of significantly different designs and heights combined with mismatched conductor spans.

In the context of the industrial forms and lines of the existing transmission line structures and conductors, the Phased Build Alternative configuration would exhibit Moderate visual contrast and would appear as a foreground, Co-dominant feature relative to the scale of the existing 220 kV line being retained and other landscape features. The slight increase in project dominance caused by the greater height of the new structures would be partially offset by the elimination of the transmission line closest (o south side residences and the northern-most line. Similar to the existing condition, view blockage of higher value landscape features (sky, and mountains to the north) would be Moderate when viewed from the south side of the ROW.

The overall visual change caused by the Phased Build Alternative would be Moderate, and in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be less than substantial. Mitigation Measures VR-8a (Minimize visual contrast in project design) and VR-9a (Treat structure surfaces) would reduce the visual effects of the Phased Build Alternative.

Impact VR-9: Project operation would create a new source of reflected light and glare

Under the Phased Build Alternative, operational lighting at substations and night lighting from O&M activities along the ROW would be the same as that for the Proposed Project, resulting in potentially substantial adverse night lighting visual effects. However, the potential glare and visual contrast effects associated with night lighting can be reduced and managed by implementing Mitigation Measure VR-7a (Minimize night lighting at project facilities), as discussed in Section D.18.3.3 above.

Glare and reflectivity from steel structures and surface color contrast would be reduced compared to the Proposed Project due to the retention of existing double-circuit structures with surfaces that have dulled over time. The visibility and reflectivity of new structures can be minimized with various surface treatments. Mitigation Measure VR-9a (Treat structure surfaces — see Section D.18.3.3 above) would reduce the apparent structure contrast and reflectivity.

D.18.5 Environmental Impacts of No Action Alternative

D.18.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts are derived for the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

Devers to Beaumont Substation. The eastern portion of the alignment is characterized by extensive wind turbines and energy transmission infrastructure and is ringed by rugged mountain ranges. South of I-10, the route passes through private lands and public lands administered by the BLM and the U.S. Forest Service, including the Santa Rosa and San Jacinto National Monument and a portion of the San Jacinto Wilderness. The existing transmission lines, with their large 500 kV structures, are a prominent built feature in the landscape along with the other energy infrastructure. This portion of the route is visible to travelers on I-10, SR 62 (a State-designated scenic highway), SR-111 (a State-eligible scenic highway), and Snow Creek Road; hikers on the Pacific Crest Trail; and residents in nearby residential areas. After traversing a portion of the northern ridges of the San Jacinto Mountains, the route descends rocky slopes and passes through the residential community of Cabazon in San Gorgonio Pass. West from Cabazon, the route crosses SR 243 (a State designated scenic highway) and passes through the cities of Banning and Beaumont. This portion of the route is visible at the base of the San Jacinto Mountains from I-10, numerous local roads, SR 243, scattered rural residences in Banning, and new residential subdivisions in Beaumont. The existing 500 kV lines are a prominent built feature in the landscape.

The introduction of an additional 500 kV transmission line would add an additional vertical (towers) and horizontal (conductors) elements to the landscape. Where space permits, the new line would be adjacent to the two existing lines. In areas where space is not available or there are jurisdictional restrictions (such as in the San Jacinto Wilderness) one of the existing single-circuit 500 kV lines would need to be removed and replaced with new double-circuit 500 kV structures. Where new single-circuit towers are installed, they would be generally adjacent to the existing towers. In locations where new double-circuit towers would be needed, these may be taller than the existing 500 kV structures that would remain and not always be aligned with them. Potential impacts associated with construction include the visibility of construction activities and equipment as well as long-term visibility of land scars in arid and semi-arid landscapes. Once installed, the transmission line would introduce contrasting structure color and result in skylining of structures as viewed from locations where the sky would be the backdrop to the structure. The visual impacts of a new line would require application of mitigation such as use of site treatment and restoration methods to reduce land scaring and contrast with the natural landscape texture and color, coloring structural steel to reduce its contrast and reflectance, locating structures to minimize skylining and reduce view blockage, and aligning new structures with existing structures. As with the DPV2 EIR/EIS's analysis of the Devers to Valley transmission line, visual impacts from the new Devers to Beaumont line could be significant and unavoidable.

Beaumont Substation. The substation location is on rolling grasslands at the base of the San Jacinto Mountains, adjacent to Highway 79, the major route connecting Beaumont and I-10 with Hemet and other communities south and of the San Jacinto Mountains. The site would be clearly visible from the highway and potentially visible from some portions of the residential area to the east, including the Childhelp Merv Griffin Village. Two to three sets of 500 kV transmission structures would enter the substation from the south, one to interconnect the new 500 kV line with the substation, the other to loop in one of the existing 500 kV lines. These structures, as well as the taller substation infrastructure would be highly visible and from many viewing angles would be visible against the sky. Exiting the north of the substation would be four 220 kV lines, mounted on pairs of adjacent double-circuit structures.

Strategies to reduce visual impacts would include measures identified for the 500 kV transmission line above, as well as the use of walls, berms, existing landforms, and vegetation to screen lower elements of the substation, and coloring of the substation steel to reduce contrast and reflectance. As well, the positioning of the substation within the property, relative to its visibility form key viewing locations, would be a consideration. However, the new substation would remain highly visible and in stark contrast to the current relatively flat open space.

Beaumont to El Casco Substation. The new 220 kV lines between Beaumont and El Casco Substations would be similar to the 220 kV lines proposed for the West of Devers Upgrade and would consist of adjacent double-circuit towers or poles located adjacent to the existing 115 kV line. The lines would be in existing ROW were available, or would require new adjacent ROW. Exiting the substation, the new lines would extend north approximately 500 feet to the existing 115 kV ROW, which leads to El Casco Substation. The lines would cross Highway 79 and extend west then northwest toward Highway 60 (Moreno Valley Freeway). The ROW is at the base of the foothills, passing through agricultural and low-density residential areas for 2 miles. It then follows San Timoteo Creek northwest for 1.5 miles, where the creek passes under the freeway. The lines remain on the west side of the freeway, paralleling it north for 2 miles, at which point the freeway turns west. Here the transmission lines would cross over the freeway and continue north 1.5 miles to El Casco Substation. The sparse vegetation and hilly terrain would result in the lines being visible from the Moreno Valley Freeway and, to a lesser extent, Oak Valley Parkway. Such visibility would be reduced by using non-reflective steel for towers and aligning tower structures with one another.

Approaches to lessening visual impacts would be similar to those that would apply to the 500 kV lines, including use of non-reflective steel, aligning structures with each other, and minimizing land scarring.

D.18.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. Construction activities for this alternative would result in temporary but substantial visual contrast from the presence of construction equipment and vehicles and from dust clouds. Visual contrast could also result from vegetation clearance and land scarring for new and improved access roads. These adverse effects would be reduced with implementation of mitigation measures to screen construction activities from view, revegetate disturbed areas, and to control fugitive dust. The new 500 kV circuit would be constructed mostly within an existing ROW, adjacent to an existing 500 kV transmission line.

Although this new 500 kV circuit would be located in and adjacent to an existing transmission corridor, the new 500 kV towers would introduce additional visual contrast, especially for residents in the Perris Valley and the City of Orange. For residents nearest to the ROW, the resulting visual contrast from the presence of the new transmission structures would be high.

The visual contrast from the new 500 kV circuit would also be high in remote and visually sensitive areas such as the Lake Mathews-Estelle Mountain reserve and the Cleveland National Forest. The use of helicopters for construction and the minimization of new and improved access roads in these natural areas would reduce the resulting visual contrast. Once installed, the transmission line would introduce contrasting structure color and result in skylining of structures as viewed from locations where the sky would be the backdrop to the structure. The visual impacts of a new line would require application of mitigation such as use of methods to reduce land scaring and contrast with the natural landscape texture and color, coloring structural steel to reduce its contrast and reflectance, locating structures to minimize skylining and reduce view blockage, and aligning new structures with existing structures.

D.18.6 Mitigation Monitoring, Compliance, and Reporting

Table D.18-10 presents the mitigation monitoring, compliance, and reporting actions for visual resources.

Table D.18-10. Mitigation Monitoring Program – Visual Resources

MITIGATION MEASURE	**VR-1a: Screen construction activities from view.** Construction yards, staging areas, and material and equipment storage areas shall be visually screened using temporary screening fencing. Fencing will be of an appropriate structure, material, and color for each specific location. This requirement shall not apply if SCE can demonstrate that construction yards are located away from areas of high public visibility including public roads, residential areas, and public recreational facilities. For any site that SCE proposes to exempt from the screening requirement, SCE shall define the site on a detailed map demonstrating its visibility from nearby roads, residences, or recreational facilities to the CPUC and BLM for review and approval at least 60 days prior to the start of construction at that site.
Location	Construction yards, staging areas, storage areas.
Monitoring / Reporting Action	CPUC/BLM monitor confirms that screening is in place and in good repair.

Table D.18-10. Mitigation Monitoring Program – Visual Resources

Effectiveness Criteria	Screening is in place and effectively blocks views. Sites exempted from screening are not readily visible from roads, residences, or recreation facilities.
Responsible Agency	CPUC/BLM
Timing	At time yard or area is being set up, screening is installed. For sites proposed for exemption, maps are provided at least 60 days prior to construction at that site.
MITIGATION MEASURE	**VR-2a: Minimize vegetation removal and ground disturbance.** Only the minimum amount of vegetation necessary for the construction of structures and facilities shall be removed during construction. At the structure locations defined in Table D.18-11, structure and access road scars may be highly visible when located on hill slopes and along ridges, or when visible from elevated vantage points. In order to reduce visual impacts, the boundaries of all areas to be disturbed at the locations defined in Table D.18-11 shall be delineated consistent with the requirements of Biological Resources Mitigation Measure VEG-1c. Staking shall define staging areas, access roads, spur roads, tower locations, pulling sites, and sites for temporary placement of spoils. Stakes and flagging shall be installed before construction and in consultation with the Project Biologist and the CPUC/BLM Environmental Monitor or Visual Specialist. Areas staked shall be as small as possible in order to minimize the visibility of ground disturbance from sensitive viewing locations such as roads, trails, residences, and recreation facilities and areas. Parking areas and staging and disposal site locations shall be similarly located in areas approved by the Project Biologist and CPUC/BLM's Environmental Monitor or Visual Specialist prior to the start of construction. All disturbances by Proposed Project vehicles and equipment shall be confined to the staked and flagged areas.
Location	All locations defined in Table D.18-11.
Monitoring / Reporting Action	Confirmation that disturbance areas are clearly delineated and staked or flagged.
Effectiveness Criteria	Project disturbance is limited to authorized areas.
Responsible Agency	CPUC/BLM
Timing	Prior to construction and site disturbance, staking/flagging delineating disturbance area is confirmed to be in place. Duration of project.
MITIGATION MEASURE	**VR-3a: Reduce color contrast of retaining walls, land scars, and graveled surfaces.** Where construction would unavoidably create land scars or retaining walls visible from sensitive public viewing locations (as defined in Table D.18-11), disturbed soils and new walls shall be treated with an appropriate color or material (Natina Concentrate, Eonite, or Permeon, or similar). The material shall be approved by the CPUC and BLM, and the intent shall be to reduce the visual contrast created by the lighter-colored disturbed soils and rock with the darker soil and vegetated surroundings. SCE shall consult with the CPUC and BLM and/or their authorized representative(s) on a site-by-site basis and obtain written approval prior to the use of any colorants.
Location	Land scars, retaining walls, and graveled surfaces visible from sensitive public viewing locations, as defined in Tbale D.18-11.
Monitoring / Reporting Action	Coordinate with SCE on locations needing treatment, and confirm treatment applied
Effectiveness Criteria	Visual contrast between land scars or retaining walls and surrounding soil, rock, and vegetation is reduced.
Responsible Agency	CPUC/BLM
Timing	When future disturbance of land surface is not anticipated and walls are complete; SCE and CPUC/BLM identify areas needing treatment.
MITIGATION MEASURE	**VR-4a: Minimize in-line views of retaining walls and land scars.** Prior to final Project design, SCE shall prepare a map book and description detailing the preliminary design and location of all access and spur roads, retaining walls, and ground disturbance areas at the locations defined in Tbale D.18-11 . The map book and description shall be submitted to the CPUC and BLM for field evaluation by the CPUC's Visual Specialist and Designated Project Biologist. In these locations, the CPUC's Visual Specialist or Environmental Monitor will evaluate all

Table D.18-10. Mitigation Monitoring Program – Visual Resources

	proposed access roads, spur roads, retaining walls, and ground disturbance areas to assess in-line visibility of these Proposed Project features and characteristics from sensitive viewing locations. The analysis shall include consideration of viewing angles, screening, view duration, and other pertinent viewing characteristics. This analysis shall be subsequently provided to SCE for response and final design. In response, SCE shall develop design options to reduce the in-line visibility of these components, including alternative access and spur road routes, the use of "drive and crush" access, and redesign and placement of retaining walls to reduce the need for new roads and retaining walls and to reduce or eliminate the in-line visibility of these facilities. SCE's redesign shall document the proposed resolution for each access road or other visible road feature and shall include the following: ▪ Approximate location, length, and design of alternative access or spur road routes that would replace proposed roads. ▪ Vegetation that would be affected and steepness of terrain for consideration of vegetation and erosion impacts. ▪ Areas where "drive and crush" access is a feasible measure to avoid access road scars (i.e., no grading or vegetation removal is required). SCE shall define frequency of driving, vehicle types to be used, and likelihood of vegetation recovery. ▪ The CPUC/BLM Visual Specialist and Designated Project Biologist shall evaluate whether the overall impacts of the alternate road designs are less than that of the original access road designs.
Location	All locations defined in Table D.18-11.
Monitoring / Reporting Action	Confirmation of receipt of requested maps/tables. Consultation between SCE and CPUC/BLM on alternative approaches to reducing in-line views of scars.
Effectiveness Criteria	In-line views of scars are minimized
Responsible Agency	CPUC/BLM
Timing	Prior to final design, provide map and/or table identifying the retaining walls, roads, or portions of roads that have the potential to create in-line views or scars from sensitive viewing areas
MITIGATION MEASURE	**VR-5a: Prohibit construction marking of natural features.** SCE shall not apply paint or permanent discoloring agents to rocks or vegetation to indicate survey or construction activity limits or for any other purpose. This measure does not apply to temporary marking agents used to identify underground utilities.
Location	Entire project
Monitoring / Reporting Action	Monitor compliance
Effectiveness Criteria	No paint or permanent discoloring agents are applied to rocks or vegetation
Responsible Agency	CPUC/BLM
Timing	Duration of project
MITIGATION MEASURE	**VR-7a: Minimize night lighting at project facilities.** SCE shall avoid night lighting where possible and minimize its use under all circumstances. To ensure this, SCE shall prepare a Night Lighting Management Plan for both construction and operation, incorporating the following general principles and specifications: ▪ Use of portable truck-mounted lighting. ▪ Emphasis on use of low-pressure sodium (LPS) or amber light-emitting diode (LED) lighting. ▪ White lighting (metal halide) would: a) only be used when necessitated by specific work tasks; b) would not be used for dusk-to-dawn lighting; and c) would be less than 3500 Kelvin color temperature. ▪ All lamp locations, orientations, and intensities including security, roadway, and task lighting. ▪ Each light fixture and each light shield.

Table D.18-10. Mitigation Monitoring Program – Visual Resources

	▪ Total estimated outdoor lighting footprint expressed as lumens or lumens per acre. ▪ Detailed list of anticipated circumstances and activities that would require night lighting including the expected frequency of the activity, the duration of the activity, and the expected amount of lighting that would be necessary for that activity. ▪ Light fixtures that could be visible from beyond project facility boundaries shall have cutoff angles sufficient to prevent lamps and reflectors from being visible beyond the project facility boundary, including security lighting. ▪ Motion sensors and other controls to be used, especially for security lighting such that lights operate only when the area is occupied. ▪ Surface treatment specification that will be employed to minimize glare and sky glow. The Night Lighting Management Plan shall also consider the following factors: ▪ All temporary construction lighting and permanent exterior lighting shall include: (a) lamps and reflectors that are not visible from beyond the construction site or facility including any off-site security buffer areas; (b) lighting that shall not cause excessive reflected glare; (c) direct lighting that shall not illuminate the nighttime sky, except for required FAA aircraft safety lighting (which, if required, shall be an on-demand, audio-visual warning system that is triggered by radar technology); (d) minimization of illumination of the Proposed Project and its immediate vicinity; (e) creation of sky glow caused by project lighting shall be avoided; and (f) compliance with local policies and ordinances to be outlined in the Night Lighting Management Plan. All permanent light sources shall be below 3,500 Kelvin color temperature (warm white) and shall be full cutoff fixtures. ▪ Always-on security lighting is to be limited to one low-wattage, fully shielded, full cutoff light fixture at the main entrance to facilities. All other security lighting is to be motion activated only through the use of passive infrared sensors and controlled as specific zones such that only targeted areas are illuminated. No other lighting is to be utilized on a nightly basis when a facility is not occupied. ▪ Lighted nighttime maintenance is to be minimized or avoided as a routine practice and should occur only during emergencies. The draft Night Lighting Management Plan shall be submitted to the CPUC and BLM at least 60 days prior to the start of construction. Following the BLM's and CPUC's review of the draft plan, and at least 15 days prior to the start of construction, SCE shall submit to the CPUC and BLM for review and approval, a final Night Lighting Management Plan. Construction activities shall not start until CPUC's and BLM's approvals of the plan have been received.
Location	Entire project
Monitoring / Reporting Action	Review draft plan, review and approve final plan, confirm implementation of plan
Effectiveness Criteria	Night lighting is minimized and in compliance with approved night lighting management plan
Responsible Agency	CPUC/BLM
Timing	At least 60 days prior to construction, draft Night Lighting Management Plan submitted to the CPUC and BLM. At least 15 days prior to the start of construction, final Night Lighting Management Plan submitted. Construction activities shall not start until plan has been approved.
MITIGATION MEASURE	**VR-8a: Minimize visual contrast in project design.** In the final design of approved project structures, SCE shall use design fundamentals that reduce the visual contrast of new structures and components to the characteristic landscape. These include siting and location; reduction of visibility; repetition of form, line, color, and texture of the landscape; and reduction of unnecessary disturbance. SCE shall provide to the CPUC and BLM for review, a draft Project Design Plan describing the siting, placement, and other design considerations to be employed to minimize Proposed Project contrast. The draft plan must explain how the design will minimize visual intrusion and contrast by blending the earthwork, vegetation manipulation, and facilities with the landscape. Design strategies to address these fundamentals shall be based on the following factors.

Table D.18-10. Mitigation Monitoring Program – Visual Resources

	▪ **Earthwork.** Select locations and alignments that fit into the landforms to minimize the sizes of cuts and fills. ▪ **Vegetation Manipulation.** Use existing vegetation to screen graded areas and facilities from public viewing to the extent feasible. Feather and thin the edges of cleared areas and retain a representative mix of plant species and sizes. ▪ **Reclamation and Restoration.** Blend the disturbed areas into the characteristic landscape including access and spur roads and disturbed areas created during construction (transmission line structures, and construction yards and staging areas). Replace soil, brush, rocks, and natural debris over these disturbed areas. Newly introduced plant species shall be of a form, color, and texture that blend with the landscape. A draft Project Design Plan shall be submitted to CPUC and BLM at least 60 days prior to the start of construction. If the CPUC or BLM notifies SCE that revisions to the plan are needed before the plan can be approved, within 30 days of receiving that notification, SCE shall prepare and submit for review and approval a revised plan. Once the Plan is made final, SCE shall provide a copy as a courtesy to each jurisdiction through which the project passes.
Location	Entire project
Monitoring / Reporting Action	Receive and review/approve draft and final surface treatment plans
Effectiveness Criteria	Visual contrast of structures and components with local landscape is reduced
Responsible Agency	CPUC/BLM
Timing	At least 60 days prior to ordering structures
MITIGATION MEASURE	**VR-9a: Treat structure surfaces.** SCE shall treat the surfaces of all structures and new buildings visible to the public such that: a) their colors minimize visual contrast by blending with the characteristic landscape colors; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. The transmission structures and conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive. SCE shall consider the use of special galvanizing treatments or post-manufacture application of chemical treatments (such as Natina Steel) to ensure that transmission structures are sufficiently dulled and non-reflective and are of the appropriate color to blend effectively with the surrounding landscape. SCE shall comply with CPUC and BLM requirements regarding appropriate surface treatments for Proposed Project elements. SCE shall provide to the CPUC and BLM for review, a draft Surface Treatment Plan describing the application of colors and textures to all new facility structures, buildings, walls, fences, and components comprising all facilities to be constructed. The draft Surface Treatment Plan must explain how the design will reduce glare and minimize visual intrusion and contrast by blending the facilities with the landscape. The draft plan shall be submitted to CPUC and BLM at least 60 days prior to ordering the first structures that are to be color-treated during manufacture or prior to construction of any of the facility components, whichever comes first. If the BLM or CPUC notifies SCE that revisions to the plan are needed before the plan can be approved, within 30 days of receiving that notification, SCE shall prepare and submit for review and approval a revised plan. The draft Surface Treatment Plan shall include the following components and specifications. ▪ Specification, and 11" x 17" color simulations at life-size scale, of the treatment proposed for use on structures, including structures treated during manufacture. ▪ A list of each major structure, building, tower and/or pole, and fencing specifying the color(s) and finish(es) proposed for each (colors must be identified by name and by vendor brand or a universal designation). ▪ Two sets of brochures and/or color chips for each proposed color. ▪ A detailed schedule for completion of the treatment. ▪ A procedure to ensure proper treatment maintenance for the life of the Proposed Project.

Table D.18-10. Mitigation Monitoring Program – Visual Resources

	▪ Until SCE receives notification of approval of the Surface Treatment Plan by the CPUC and BLM, SCE shall not specify to the vendors the treatment of any buildings or structures for manufacture and shall not perform the final treatment on any buildings or structures treated on site. Additionally, construction activities shall not start until approval of the plan from the CPUC and BLM has been received. Within 14 days following the completion of treatment on any facility component, SCE shall notify the CPUC and BLM that the component (e.g., structure or building) is ready for inspection.
Location	Entire project
Monitoring / Reporting Action	Receive and review/approve draft and final surface treatment plans
Effectiveness Criteria	Visual contrast of structures and components with local landscape is reduced
Responsible Agency	CPUC/BLM
Timing	At least 60 days prior to ordering structures

Table D.18-11. Structure Locations Subject to Mitigation Measures VR-2a, VR-3a, and VR-4a

The following structure locations have been identified as subject to Visual Resource Mitigation Measures VR-2a, VR-3a, and VR-4a based on the high visibility of their respective installation/removal impact areas to nearby vantage points including residences, roads, recreational facilities, and other public locations. However, if structure installation, modification, or removal activities result in benign visual outcomes (lack of visual contrast), the mitigation described in Mitigation Measures VR-2a, VR-3a, and VR-4a would not be necessary.

Segment	Structures	Status	Visibility Discussion
1	1W03, 1E03	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets and residents to the northwest, north, and northeast.
	M2-T5, M2-T5	Remove	
2	2N02	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets and residents to the northwest, north, and northeast.
	M39-T4	Remove	
	2N03	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets and residents to the northwest, north, and northeast.
	2N10	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets and residents to the northwest, north, and northeast.
	M41-T1	Remove	
	2N11	Proposed	This elevated hillslope location would be highly visible to travelers on the numerous nearby public streets and residents to the northwest, north, and northeast.
	M41-T2	Remove	
	2N12	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets and residents to the north and northeast.
	M41-T3	Remove	
	2N16	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets (e.g., Prado Lane and Canyon Vista Drive) and residences to the northwest, north, and northeast.
	M42-T1	Remove	
	2N17	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets (e.g., Prado Lane and Canyon Vista Drive) and residents to the northwest, north, east, and southeast.
	M42-T2	Remove	
	2N18	Proposed	This elevated and prominent hillslope location would be highly visible to travelers on the numerous nearby public streets (e.g., Prado Lane and Canyon Vista Drive) and residents to the northwest, north, east, and southeast.
	M43-T3	Remove	
	2N23	Proposed	This elevated hillslope location would be prominently visible to travelers on nearby public streets and residents to the northwest, north, and east.
	M43-T2	Remove	
	2N29	Proposed	This elevated hillslope location would be prominently visible to travelers on nearby public streets and residents to the north.
	M43-T6	Remove	
	2N32	Proposed	This elevated hillslope location would be prominently visible to travelers on the adjacent public roads (I-215 and S. Mt. Vernon Ave.) and a retail complex.
	M44-T3	Remove	
3	3S01	Modify	This elevated hillslope location would be prominently visible to travelers on San Timoteo Canyon Road and residents in the Tukwet Canyon residential development.
	M89-T1	Remove	
	3S02	Proposed	This elevated hilltop location would be prominently visible to travelers on San Timoteo Canyon Road and residents in the Tukwet Canyon residential development.
	M29-T2	Remove	
	M89-T2	Remove	
	3N03	Proposed	This elevated hillslope location would be prominently visible to travelers on San Timoteo Canyon Road.
	PP#123273	Remove	
	3S02	Proposed	This elevated hilltop location would be prominently visible to travelers on San Timoteo Canyon Road and residents in the Tukwet Canyon residential development.
	M29-T2	Remove	
	M89-T2	Remove	
	3S03	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road.

Table D.18-11. Structure Locations Subject to Mitigation Measures VR-2a, VR-3a, and VR-4a

The following structure locations have been identified as subject to Visual Resource Mitigation Measures VR-2a, VR-3a, and VR-4a based on the high visibility of their respective installation/removal impact areas to nearby vantage points including residences, roads, recreational facilities, and other public locations. However, if structure installation, modification, or removal activities result in benign visual outcomes (lack of visual contrast), the mitigation described in Mitigation Measures VR-2a, VR-3a, and VR-4a would not be necessary.

Segment	Structures	Status	Visibility Discussion
3 (continued)	3N04	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road.
	PP#123272	Remove	
	3S04	Modify	This elevated hilltop location would be prominently visible to travelers on San Timoteo Canyon Road and residents in the Tukwet Canyon residential development.
	M89-T3	Remove	
	3N08, 3S08	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road.
	PP#123270	Remove	
	M30-T1	Remove	
	M90-T1	Remove	
	3N12, 3S12	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road.
	PP#123268	Remove	
	M30-T3	Remove	
	M90-T3	Remove	
	3N16, 3S16	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123265	Remove	
	M31-T1	Remove	
	M91-T1	Remove	
	3N17, 3S17	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123264	Remove	
	M31-T2	Remove	
	M91-T2	Remove	
	3N19, 3S19	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123263	Remove	
	3N20, 3S20	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123262	Remove	
	M31-T3	Remove	
	M91-T3	Remove	
	3N21, 3S21	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123261	Remove	
	M32-T1	Remove	
	3N22, 3S22	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	M92-T1	Remove	
	3N23, 3S23	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123260	Remove	
	M32-T2	Remove	
	M92-T2	Remove	
	3N24, 3S24	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123259	Remove	

Table D.18-11. Structure Locations Subject to Mitigation Measures VR-2a, VR-3a, and VR-4a

The following structure locations have been identified as subject to Visual Resource Mitigation Measures VR-2a, VR-3a, and VR-4a based on the high visibility of their respective installation/removal impact areas to nearby vantage points including residences, roads, recreational facilities, and other public locations. However, if structure installation, modification, or removal activities result in benign visual outcomes (lack of visual contrast), the mitigation described in Mitigation Measures VR-2a, VR-3a, and VR-4a would not be necessary.

Segment	Structures	Status	Visibility Discussion
3 (continued)	3N25, 3S25	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123258	Remove	
	M32-T3	Remove	
	M92-T3	Remove	
	3N26, 3S26	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123257	Remove	
	3N27, 3S27	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123256	Remove	
	M33-T1	Remove	
	M93-T1	Remove	
	3N28, 3S28	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123255	Remove	
	M33-T2	Remove	
	M93-T2	Remove	
	3N29, 3S29	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123254	Remove	
	3N31, 3S31	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123253	Remove	
	M33-T3	Remove	
	3N32, 3S32	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123252	Remove	
	M33-T4	Remove	
	M93-T3	Remove	
	3N33, 3S33	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123251	Remove	
	M33-T5	Remove	
	M93-T4	Remove	
	3N35, 3S35	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123250	Remove	
	M34-T1	Remove	
	M94-T1	Remove	
	3N36, 3S36	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123249	Remove	
	3N37, 3S37	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123248	Remove	
	M34-T2	Remove	
	M94-T2	Remove	

Table D.18-11. Structure Locations Subject to Mitigation Measures VR-2a, VR-3a, and VR-4a

The following structure locations have been identified as subject to Visual Resource Mitigation Measures VR-2a, VR-3a, and VR-4a based on the high visibility of their respective installation/removal impact areas to nearby vantage points including residences, roads, recreational facilities, and other public locations. However, if structure installation, modification, or removal activities result in benign visual outcomes (lack of visual contrast), the mitigation described in Mitigation Measures VR-2a, VR-3a, and VR-4a would not be necessary.

Segment	Structures	Status	Visibility Discussion
3 (continued)	3N38, 3S38	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123247	Remove	
	M34-T3	Remove	
	M95-T1	Remove	
	3N39, 3S39	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123246	Remove	
	3N40, 3S40	Proposed	This elevated ridgeline location would be prominently visible to travelers on San Timoteo Canyon Road and nearby rural residents.
	PP#123245	Remove	
	M35-T1	Remove	
	M95-T2	Remove	
4	4N02, 4S02	Proposed	This ridgeline location would be prominently visible to visitors to San Gorgonio Memorial Park and Cemetery.
	M17-T3	Remove	
	M77-T3	Remove	
	PP#123351	Remove	This ridgeline location would be prominently visible to visitors to San Gorgonio Memorial Park and Cemetery.
	PP#123350	Remove	This ridgeline location would be prominently visible to visitors to San Gorgonio Memorial Park and Cemetery.
	4N03, 4S03	Proposed	This ridgeline location would be prominently visible to visitors to San Gorgonio Memorial Park and Cemetery.
	M18-T1	Remove	
	M78-T1	Remove	
	4N50, 4S50	Proposed	This elevated location would be prominently visible to travelers on Palmer Avenue and Cherry Valley Boulevard, as well as to residents in the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	PP#123287	Remove	
	M27-T1	Remove	
	M87-T1	Remove	
	4N51, 4S51	Proposed	This ridgeline location would be prominently visible from Palmer Avenue and residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	PP#123286	Remove	
	4N52, 4S52	Proposed	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	PP#123285	Remove	
	M27-T2	Remove	
	M87-T2	Remove	
	4N53, 4S53	Proposed	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	PP#123284	Remove	
	4N54, 4S54	Proposed	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	PP#123283	Remove	
	M27-T3	Remove	
	M87-T3	Remove	

Table D.18-11. Structure Locations Subject to Mitigation Measures VR-2a, VR-3a, and VR-4a

The following structure locations have been identified as subject to Visual Resource Mitigation Measures VR-2a, VR-3a, and VR-4a based on the high visibility of their respective installation/removal impact areas to nearby vantage points including residences, roads, recreational facilities, and other public locations. However, if structure installation, modification, or removal activities result in benign visual outcomes (lack of visual contrast), the mitigation described in Mitigation Measures VR-2a, VR-3a, and VR-4a would not be necessary.

Segment	Structures	Status	Visibility Discussion
4 (continued)	4N55, 4S55	Proposed	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	PP#123282	Remove	
	M27-T4	Remove	
	M87-T4	Remove	
	4N56	Modify	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	4S56	Proposed	
	PP#123281	Remove	
	M88-T1	Remove	
	4N57, 4S57	Proposed	This Ridgeline Location Would Be Prominently Visible From Residences And Roads Within The Tukwet Canyon Residential Development Located Immediately South And Adjacent To The Corridor.
	PP#123280	Remove	
	4N58	Proposed	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	PP#123279	Remove	
	4S58	Modify	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	M88-T2	Remove	
	4S59	Modify	This ridgeline location would be prominently visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
	4S60	Proposed	This hillslope location would be visible from residences and roads within the Tukwet Canyon residential development located immediately south and adjacent to the corridor.
5	PP#123359	Remove	This ridgeline location would be visible from residences and roads within the north Banning residential neighborhoods located immediately south and adjacent to the corridor.
	M17-T1	Remove	
	M77-T1	Remove	
	PP#123358	Remove	This ridgeline location would be visible from residences and roads within the north Banning residential neighborhoods located immediately south and adjacent to the corridor.
6	6N28	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	M3-T2	Remove	
	M64-T1	Remove	
	6S28	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	T250	Remove	
	6S28A	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	T249	Remove	
	T248	Remove	
	6N29	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	M4-T1	Remove	
	M64-T2	Remove	

Table D.18-11. Structure Locations Subject to Mitigation Measures VR-2a, VR-3a, and VR-4a

The following structure locations have been identified as subject to Visual Resource Mitigation Measures VR-2a, VR-3a, and VR-4a based on the high visibility of their respective installation/removal impact areas to nearby vantage points including residences, roads, recreational facilities, and other public locations. However, if structure installation, modification, or removal activities result in benign visual outcomes (lack of visual contrast), the mitigation described in Mitigation Measures VR-2a, VR-3a, and VR-4a would not be necessary.

Segment	Structures	Status	Visibility Discussion
6 (continued)	6S29	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T247	Remove	
	T247A	Remove	
	6N30	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	M4-T2	Remove	
	M64-T3	Remove	
	6S30	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T246	Remove	
	6S30A	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T245	Remove	
	6N31	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	M4-T3	Remove	
	M65-T1	Remove	
	6S31	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T244	Remove	
	6S31A	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T243	Remove	
	6N32	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	M5-T1(1)	Remove	
	M65-T2	Remove	
	6S32	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T241	Remove	
	6S33	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T240	Remove	
	T239	Remove	This ridgeline location would be prominently visible from the Interstate 10 travel corridor.
	6N34	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	M5-T2	Remove	
	M65-T3	Remove	
	6S34	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor.
	T238	Remove	
	6N35	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor and the Whitewater residential community to the west.
	M5-T3	Remove	
	M66-T1	Remove	
	6S35	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor and the Whitewater residential community to the west.
	T237	Remove	
	T236	Remove	This ridgeline location would be prominently visible from the Interstate 10 travel corridor and the Whitewater residential community to the west.

Table D.18-11. Structure Locations Subject to Mitigation Measures VR-2a, VR-3a, and VR-4a

The following structure locations have been identified as subject to Visual Resource Mitigation Measures VR-2a, VR-3a, and VR-4a based on the high visibility of their respective installation/removal impact areas to nearby vantage points including residences, roads, recreational facilities, and other public locations. However, if structure installation, modification, or removal activities result in benign visual outcomes (lack of visual contrast), the mitigation described in Mitigation Measures VR-2a, VR-3a, and VR-4a would not be necessary.

Segment	Structures	Status	Visibility Discussion
6 (continued)	6S36	Proposed	This elevated hillslope location would be prominently visible from the Interstate 10 travel corridor and the Whitewater residential community to the west.
	T235	Remove	
	6N37	Proposed	This ridgeline location would be prominently visible from the Interstate 10 travel corridor and the Whitewater residential community to the west.
	M6-T1	Remove	
	M66-T2	Remove	
	6S37	Proposed	This elevated alluvial fan location would be prominently visible from the Interstate 10 travel corridor and the Whitewater residential community to the west.
	T234	Remove	
	T229	Remove	This location would be prominently visible from the nearby Pacific Crest Trail.
	6S41	Proposed	This location would be prominently visible from the nearby Pacific Crest Trail.
	T228	Remove	
	T228	Remove	This location would be prominently visible from the nearby Pacific Crest Trail.
	6N42	Proposed	This location would be prominently visible from the nearby Pacific Crest Trail.
	6S42	Proposed	This location would be prominently visible from the nearby Pacific Crest Trail.

D.18.7 References

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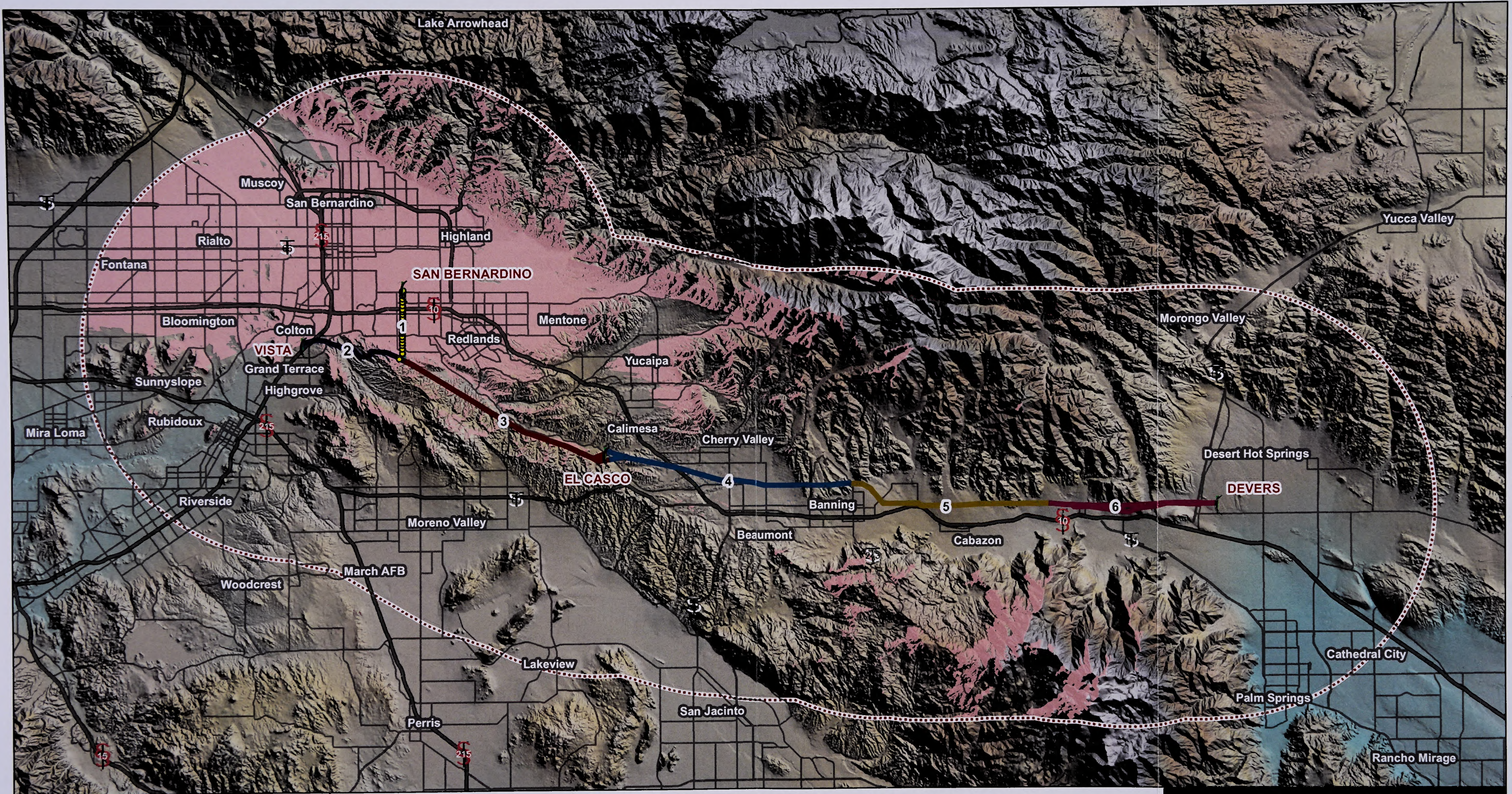


Sources: SCE 2014, USGS 2013

0 2.5 5 10 Miles

Segment 1 Structures (Proposed or Modify)

Substation

10-mile Buffer around Project

Transmission Line Segment

1 4
2 5
3 6

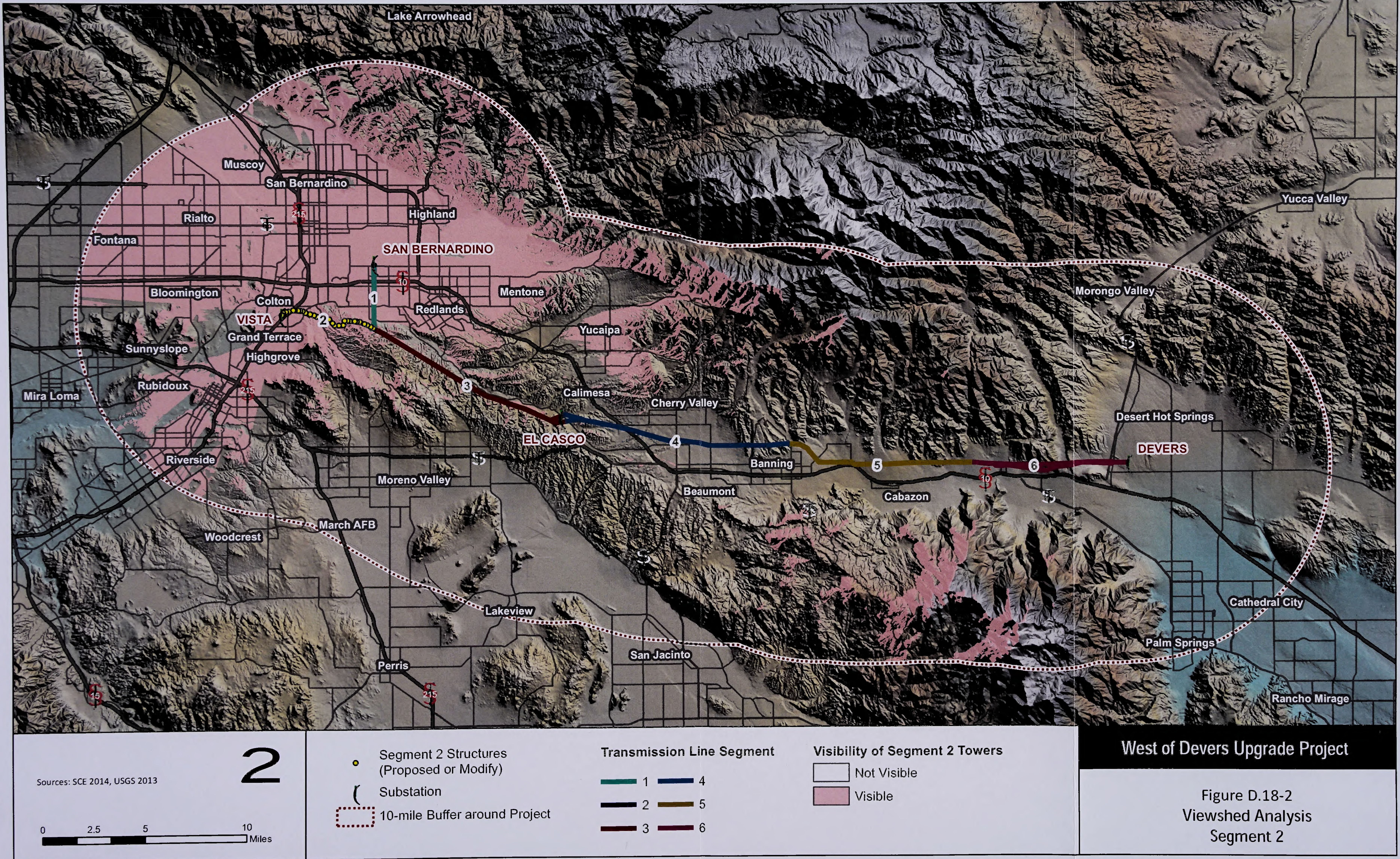
Visibility of Segment 1 Towers

Not Visible

Visible

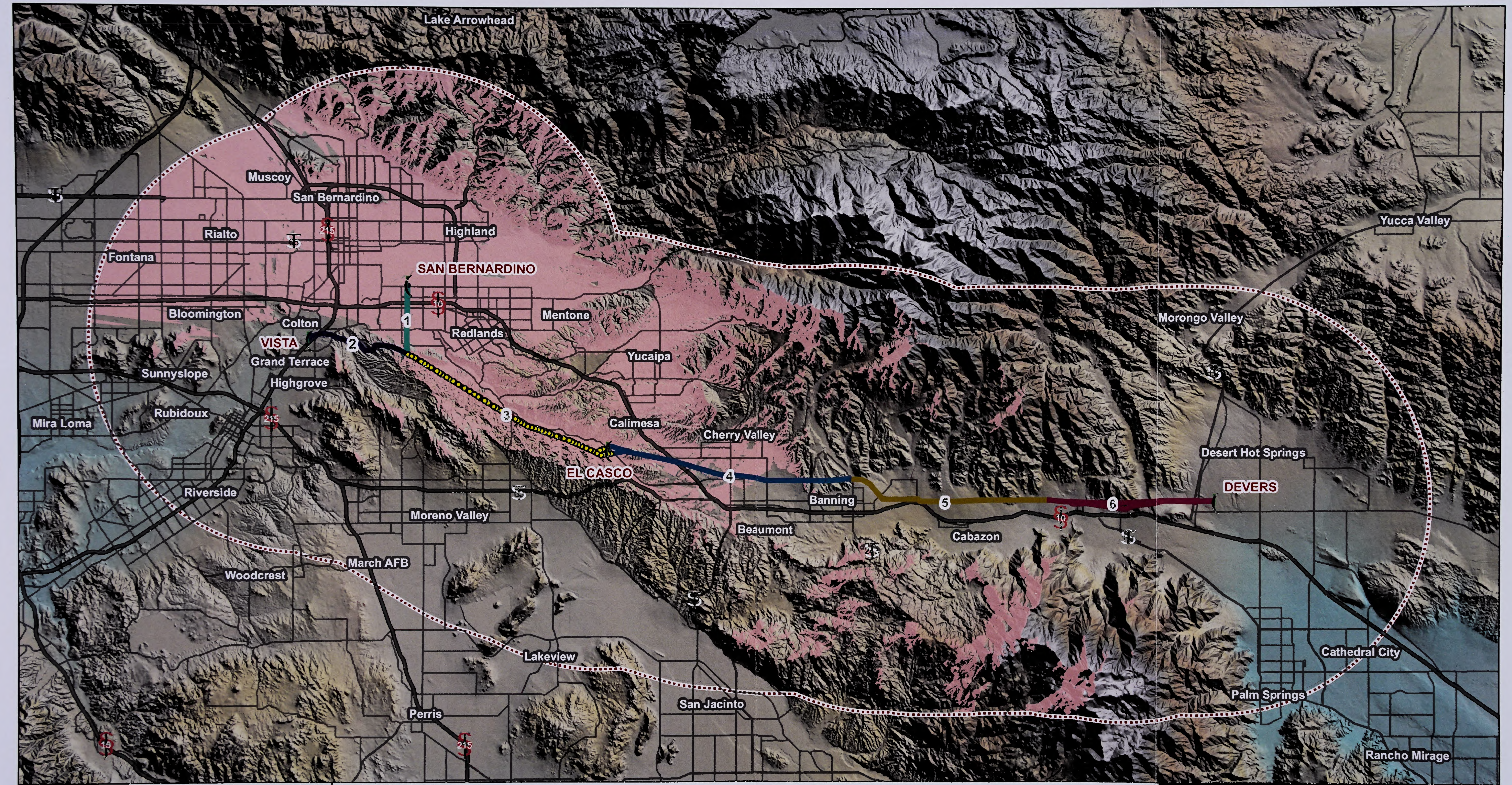
West of Devers Upgrade Project

Figure D.18-1
Viewshed Analysis
Segment 1



West of Devers Upgrade Project

Figure D.18-2
Viewshed Analysis
Segment 2



Sources: SCE 2014, USGS 2013

2

0 2.5 5 10 Miles

Segment 3 Structures (Proposed or Modify)

Substation

10-mile Buffer around Project

Transmission Line Segment

1
2
3
4
5
6

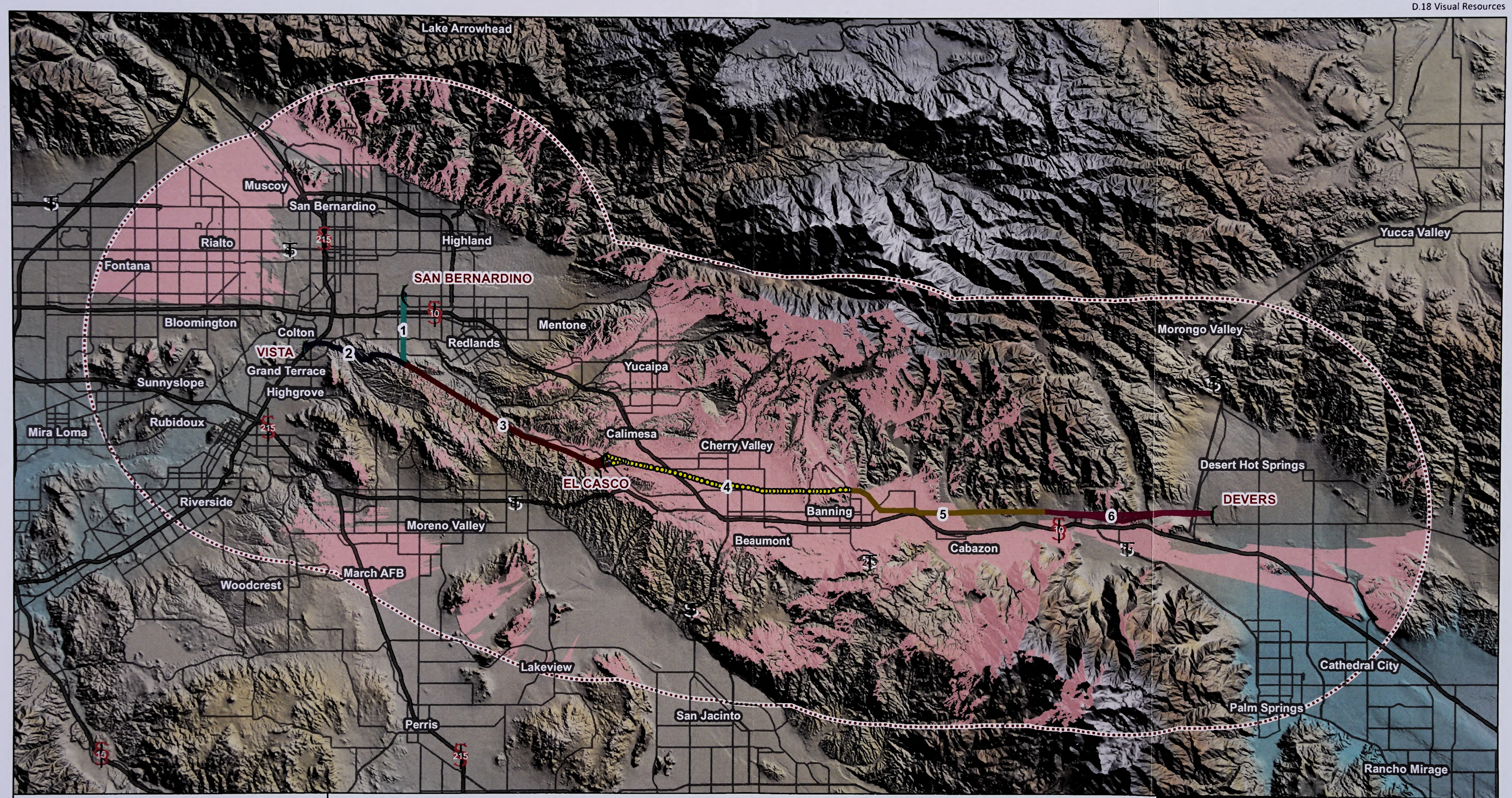
Visibility of Segment 3 Towers

Not Visible

Visible

West of Devers Upgrade Project

Figure D.18-3
Viewshed Analysis
Segment 3



2

Sources: SCE 2014, USGS 2013

0 2.5 5 10 Miles

Segment 4 Structures (Proposed or Modify)

Substation

10-mile Buffer around Project

Transmission Line Segment

1 4
2 5
3 6

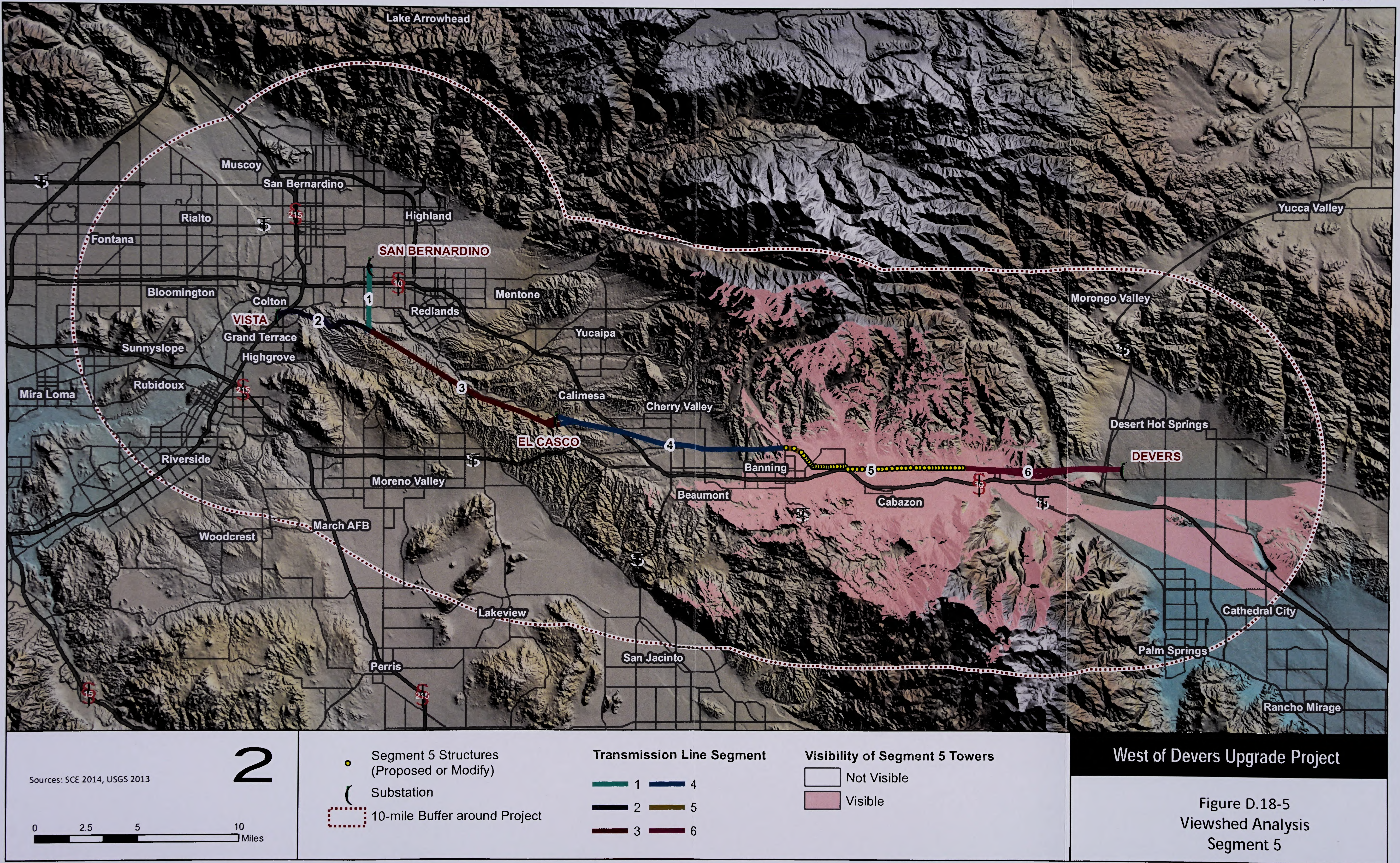
Visibility of Segment 4 Towers

Not Visible

Visible

West of Devers Upgrade Project

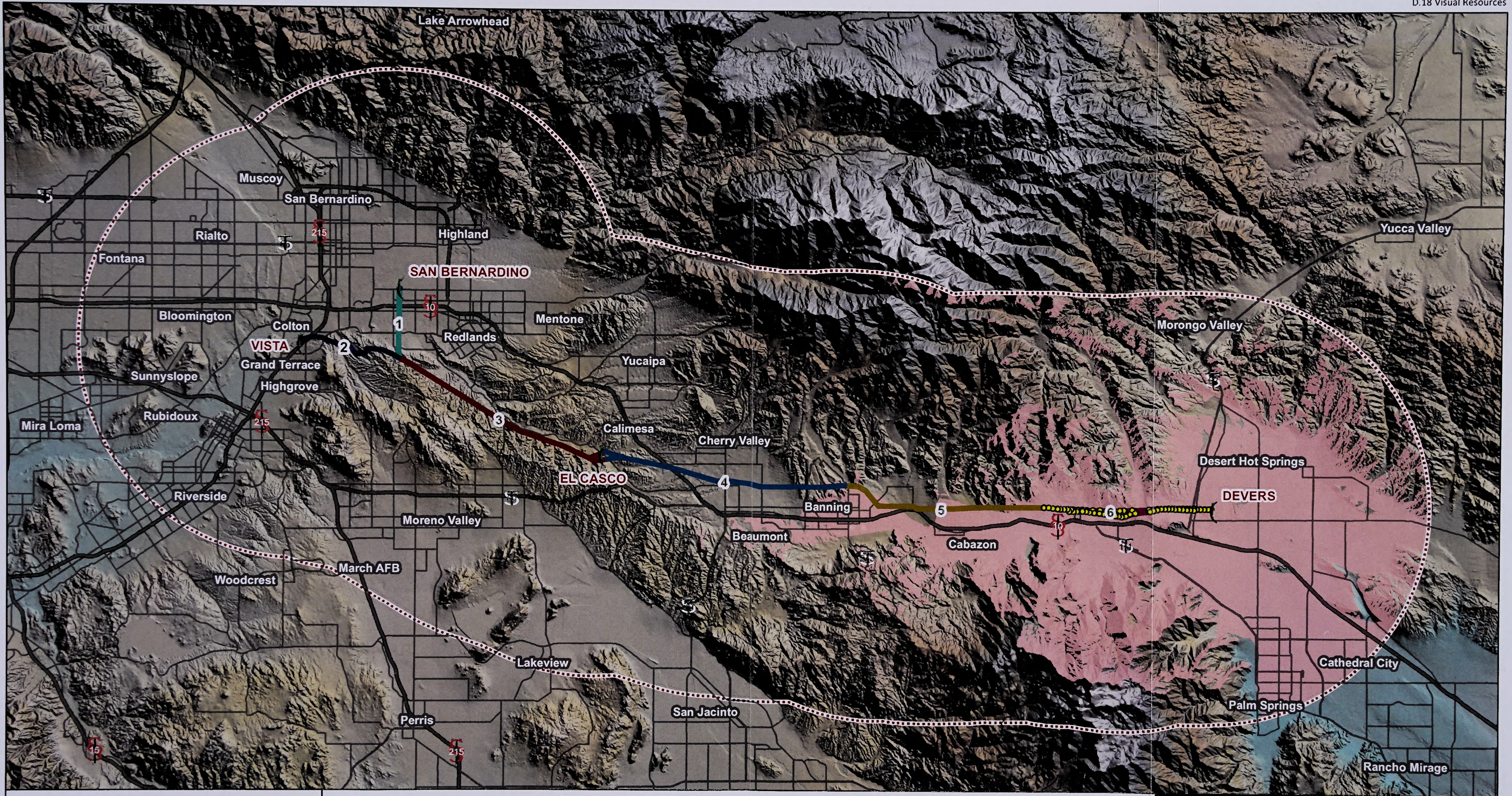
Figure D.18-4
Viewshed Analysis
Segment 4



West of Devers Upgrade Project

Figure D.18-5
Viewshed Analysis
Segment 5

July 2016



Sources: SCE 2014, USGS 2013

0 2.5 5 10 Miles

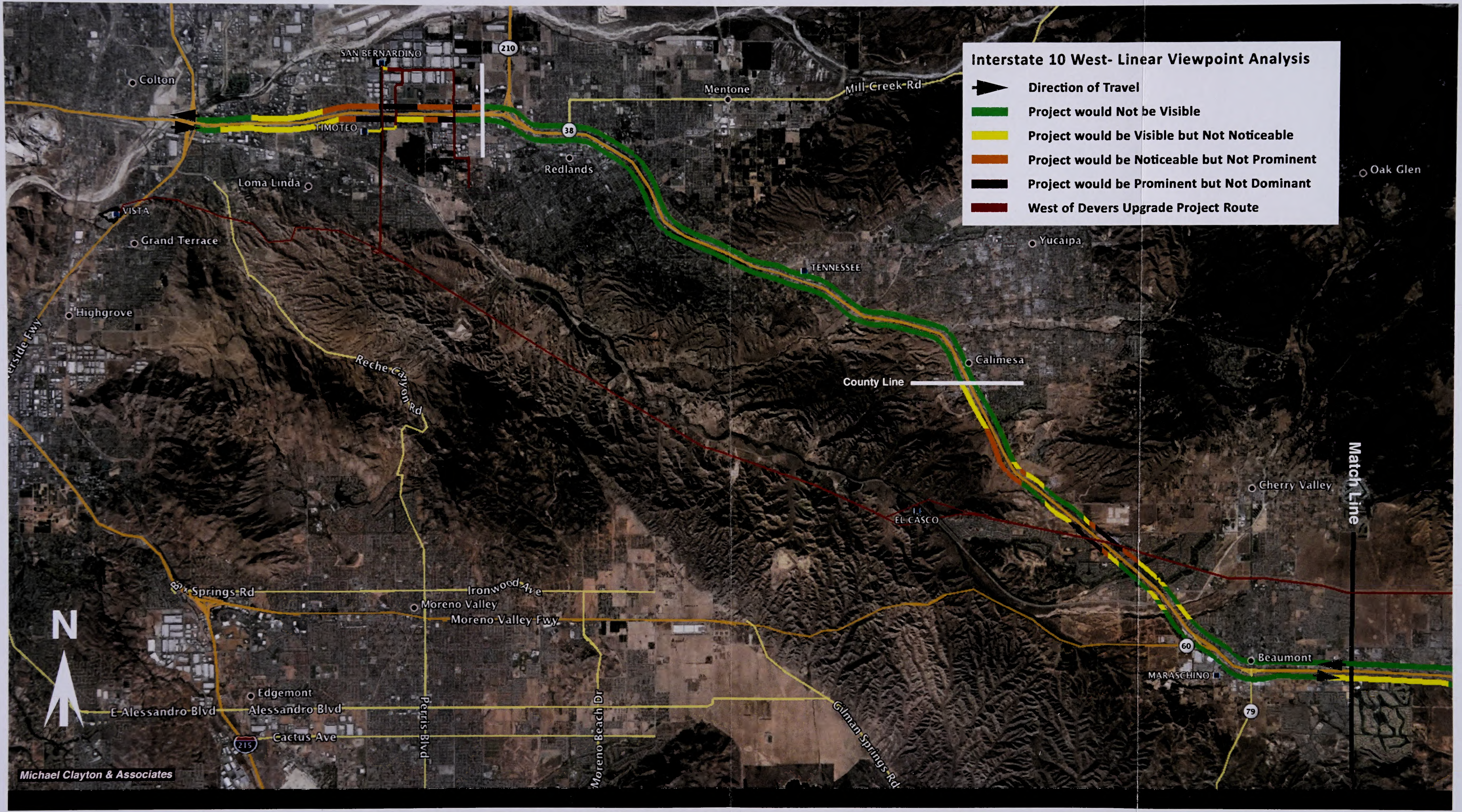
Segment 6 Structures (Proposed or Modify)
Substation
10-mile Buffer around Project

Transmission Line Segment
1 2 3 4 5 6

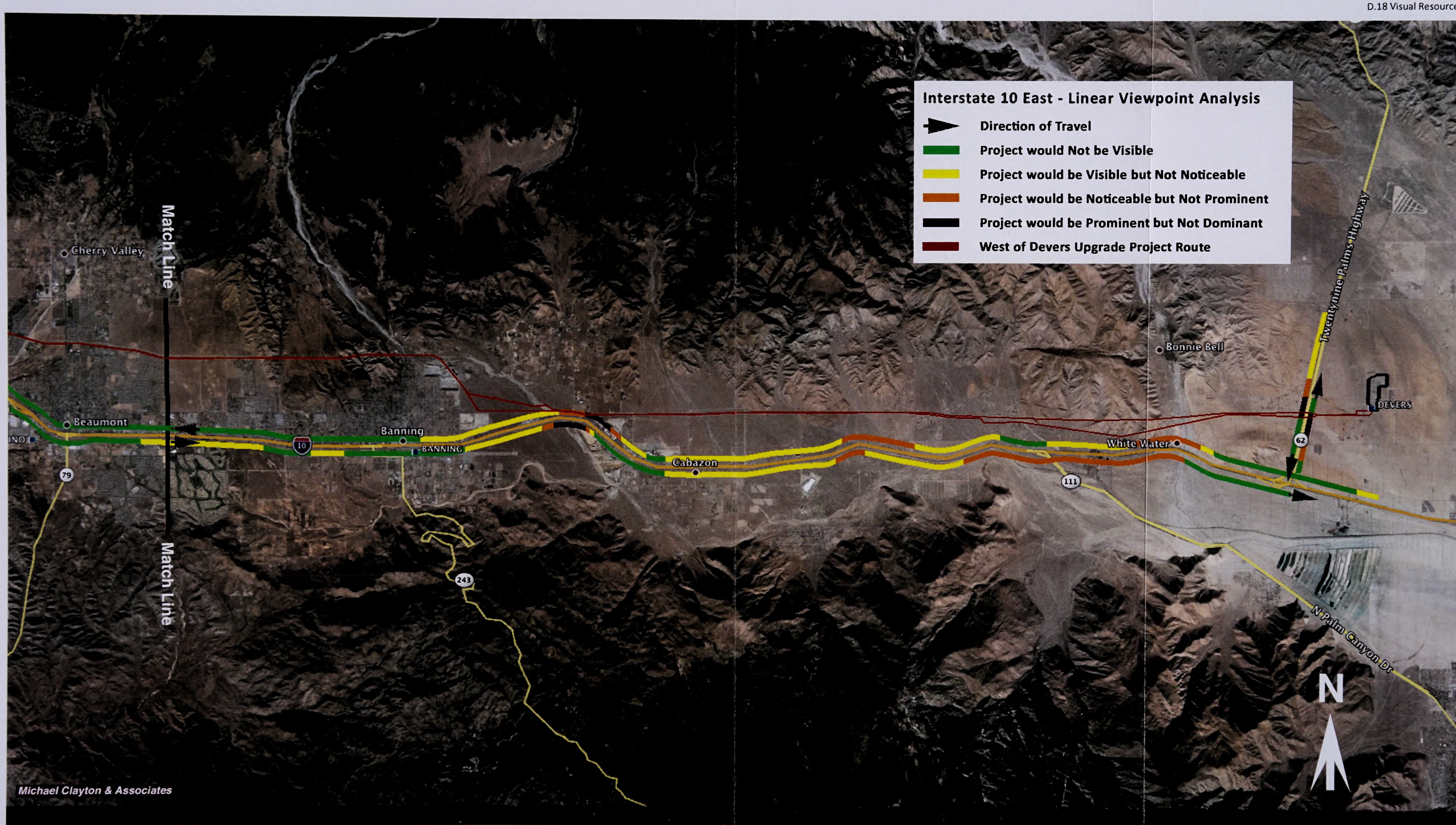
Visibility of Segment 6 Towers
Not Visible
Visible

West of Devers Upgrade Project

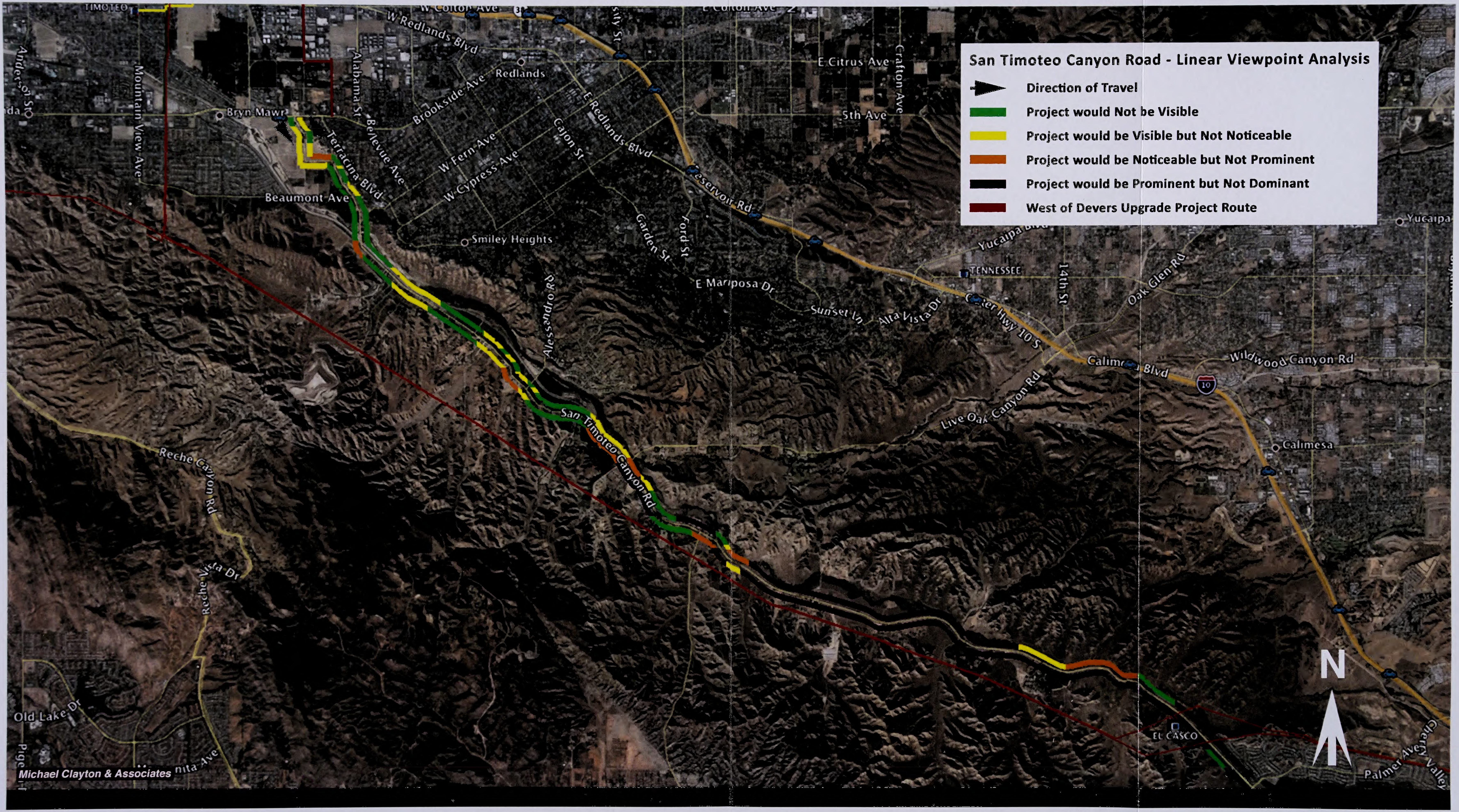
Figure D.18-6
Viewshed Analysis
Segment 6



This Linear Viewpoint Map illustrates the visibility of the western half of the Project from both Eastbound and Westbound I-10. Views from I-10 are color-coded as shown in the legend above and include views up to 90 degrees off the direction of travel.	Linear Viewpoint Map Interstate 10 - West	SCE West of Devers Upgrade Project Visual Resources Figure D.18-7A

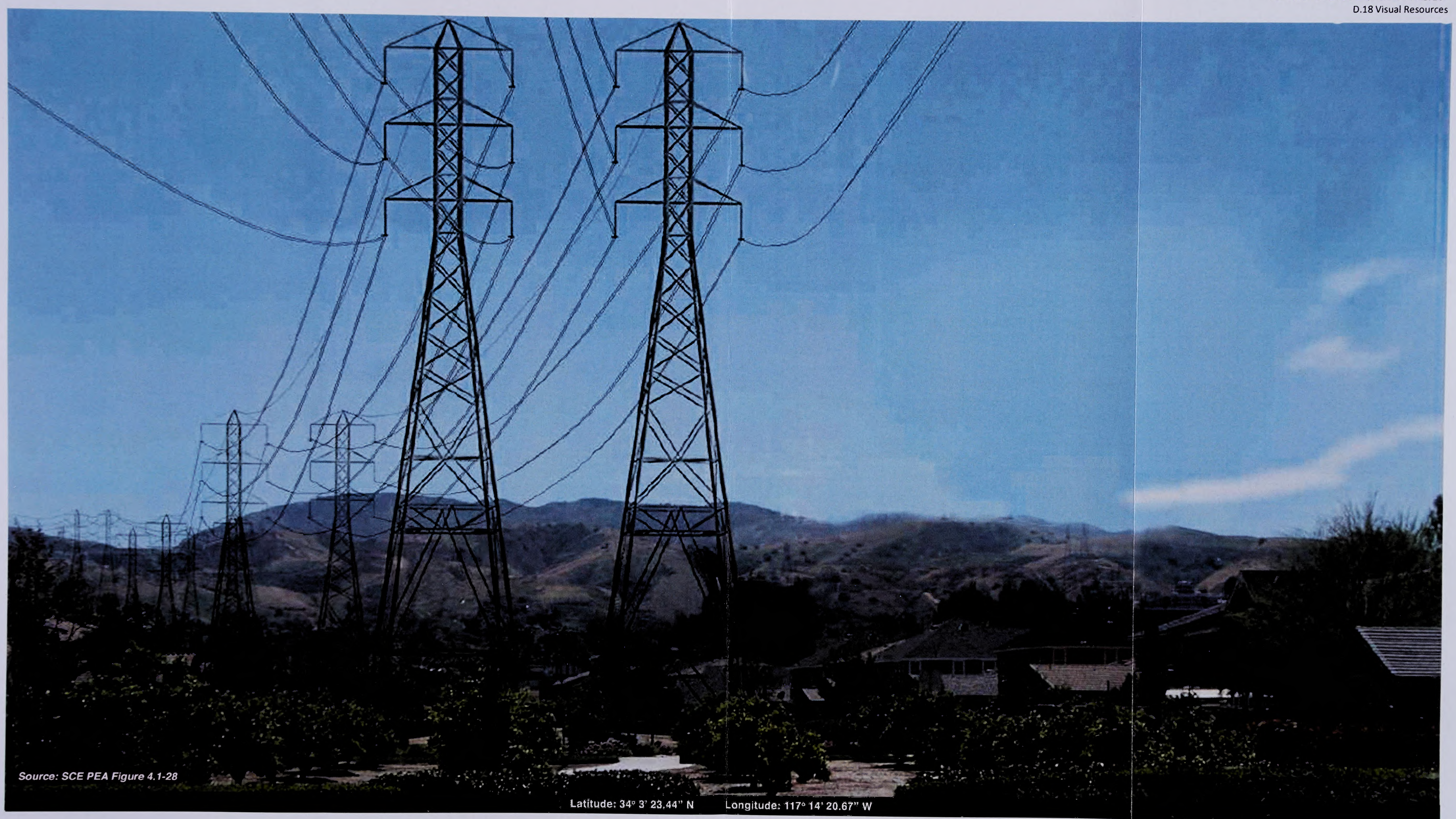


This Linear Viewpoint Map illustrates the visibility of the eastern half of the Project from both Eastbound and Westbound I-10 and Northbound and Southbound SR 62. Views from I-10 and SR 62 are color-coded as shown in the legend above and include views up to 90 degrees off the direction of travel.	**Linear Viewpoint Map** **Interstate 10 - East**	**SCE West of Devers Upgrade Project** **Visual Resources Figure D.18-7B**



This Linear Viewpoint Map illustrates the visibility of the Project from both Eastbound and Westbound San Timoteo Canyon Road. Views from San Timoteo Canyon Road are color-coded as shown in the legend above and include views up to 90 degrees off the direction of travel.	Linear Viewpoint Map San Timoteo Canyon	SCE West of Devers Upgrade Project Visual Resources Figure D.18-7C

This image presents the **Existing View** to the south, from **KOP 1** at the **Segment 1 ROW crossing of Mission Road,** in the City of Loma Linda. This view encompasses that portion of Segment 1 heading south from Mission Road, towards San Bernardino Junction, just beyond the first ridgeline at the far left edge of the image. This image also captures the park setting that has been developed beneath the lines in the ROW, the residential developments that back on to the ROW, and the hills that provide a backdrop to the south.	**KOP 1** **Mission Road at ROW** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-8A**



This image presents a **Visual Simulation** of the Proposed Project from **KOP 1** at the **Segment 1 ROW crossing of Mission Road,** in the City of Loma Linda. The simulation illustrates the replacement of the existing facilities within this segment with two, taller double-circuit transmission lines with identical lattice structure designs. The result is a less structurally complex though slightly more prominent Project presence. There is also less view blockage of the background hills with removal of the subtransmission line.	**KOP 1** **Mission Road at ROW** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-8B**

This image presents the **Existing View** to the west, from **KOP 2** on **Canyon Vista Drive**, just west of East Chase Canyon Lane, in the City of Colton. This view encompasses a residential neighborhood and a portion of Segment 1 between San Bernardino Junction and Vista Substation. Three transmission lines are positioned along the ridgeline south of the subdivision. The northern-most line (second and fifth structures from the left in this image) is to be replaced under the Proposed Project.	**KOP 2** **Canyon Vista Drive** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-9A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 2** on **Canyon Vista Drive**. This simulation illustrates the replacement of one of the three transmission lines (second and fifth towers) that pass along the ridge to the south of the subdivision. Although the proposed structures would be somewhat taller than the existing structures, they would appear similar in prominence and, and the overall structural complexity of the ROW would be similar.	**KOP 2** **Canyon Vista Drive** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-9B**

This image presents a **Visual Simulation** of the Proposed Project with **FAA Hazard Marker Balls** added, as viewed from **KOP 2** on **Canyon Vista Drive**. This simulation illustrates the addition of several marker balls to each affected span based on a preliminary determination by SCE of the spans that may need marker balls. A final determination of the spans requiring marker balls will be known once detailed engineering is complete, an application has been submitted to the FAA, and the FAA has made its determination.	**KOP 2** **Canyon Vista Drive** **Visual Simulation**	**SCE West of Devers Upgrade Project** **CEQA EIR / NEPA EIS** **Visual Resources** **Figure D.18-9C**

This image presents the **Existing View** to the west from **KOP 3** on **Pilgrim Road,** off of **San Timoteo Canyon Road,** in the City of Calimesa. This rural residential view captures portions of the three transmission lines that traverse the hills and ridgelines that define the southwest boundary of San Timoteo Canyon.	**KOP 3** **Pilgrim Road** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-10A**

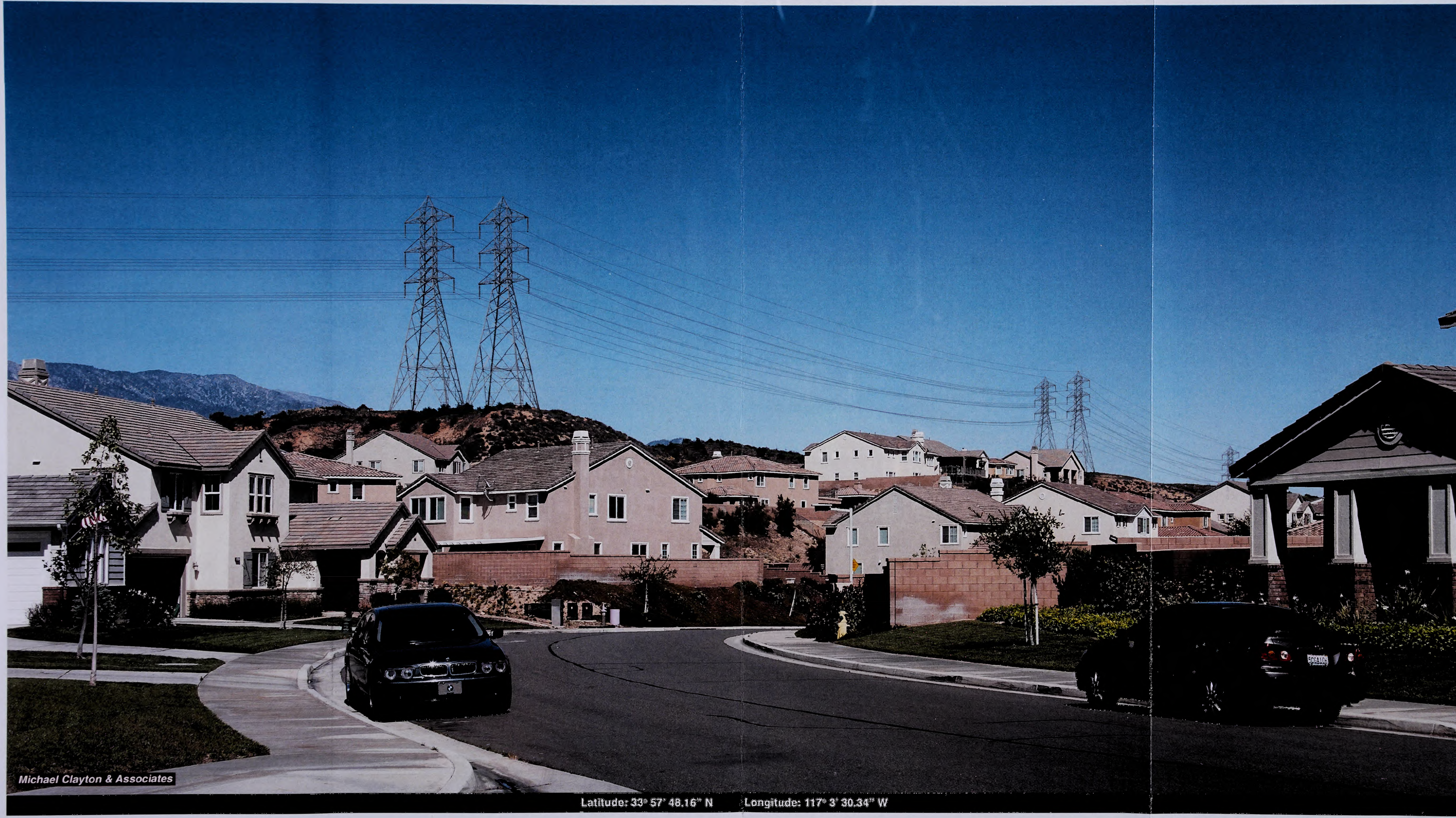
This image presents a **Visual Simulation** of the Proposed Project from **KOP 3** on **Pilgrim Road** off of **San Timoteo Canyon Road**, in the City of Calimesa. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two taller transmission lines of the same design. As shown in the simulation, the new structures would appear similar in prominence while overall structural complexity of the ROW would appear similar to somewhat reduced.	**KOP 3** **Pilgrim Road** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-10B**

This image presents the **Existing View** to the southwest from **KOP 4** on **San Timoteo Canyon Road,** approximately 0.70 mile east of Redlands Boulevard, in the City of Calimesa. This rural residential view captures portions of the three transmission lines that traverse the hills and ridgelines that define the southwest boundary of San Timoteo Canyon.	**KOP 4** **San Timoteo Canyon Road** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-11A**

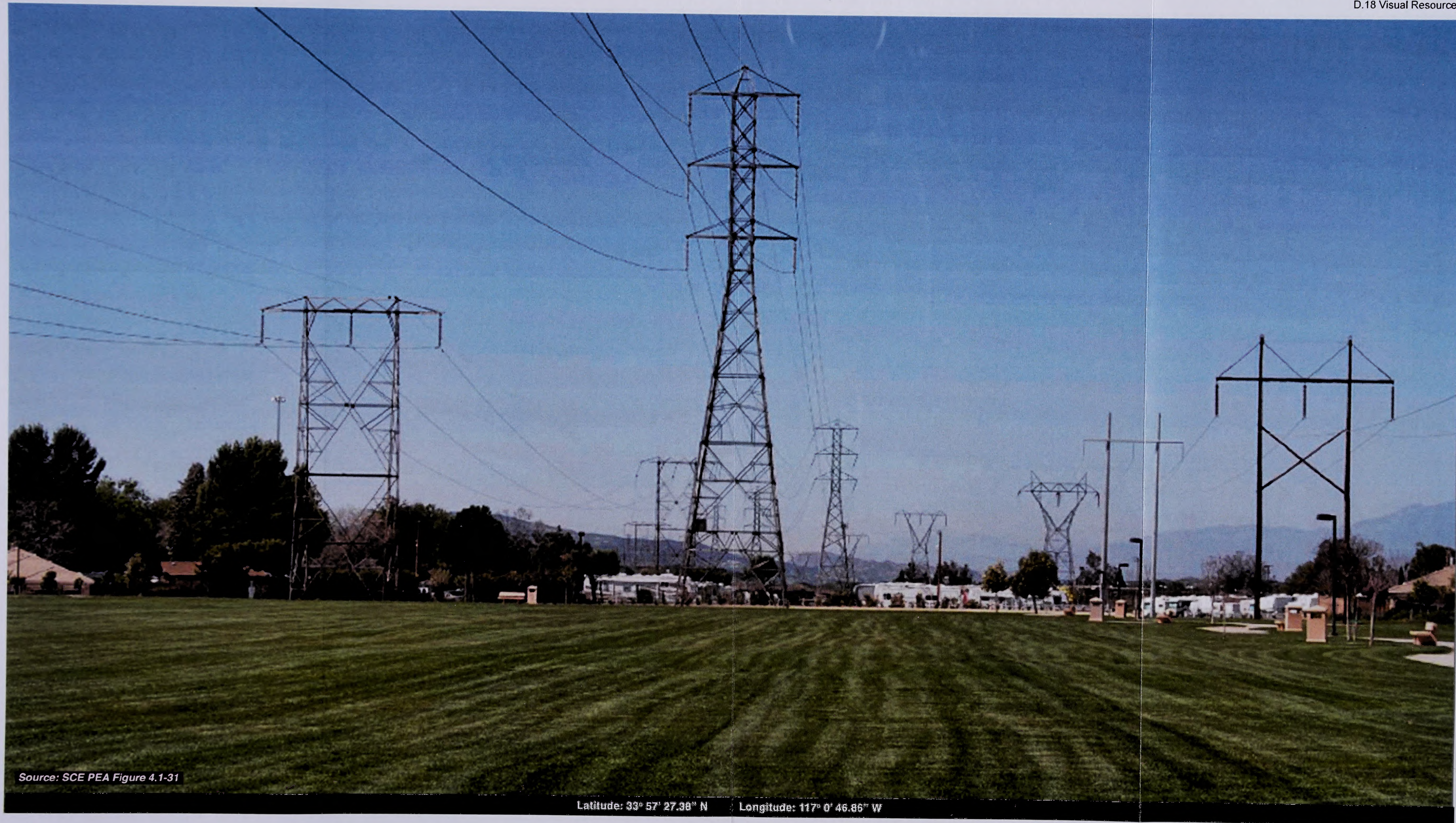
This image presents a **Visual Simulation** of the Proposed Project from **KOP 4** on **San Timoteo Canyon Road,** approximately 0.70 mile east of Redlands Boulevard, in the City of Calimesa. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines with taller structures but of the same design. As shown in the simulation, the new structures would appear similar in prominence compared to the existing structures, and overall ROW complexity would be reduced.	**KOP 4** **San Timoteo Canyon Road** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-11B**

This image presents a **Visual Simulation** of the Proposed Project with FAA Hazard Marker Balls added to conductor spans, as preliminarily determined by SCE, and viewed from **KOP 4** on **San Timoteo Canyon Road**. For shorter conductor spans needing three or fewer marker balls, the marker balls are all aviation orange in color. Longer spans utilize alternating colors of orange, white, and yellow. A final determination of the spans needing marker balls will be made by the FAA once final engineering is complete.	**KOP 4** **San Timoteo Canyon Road** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-11C**

This image presents the **Existing View** to the northeast from **KOP 5** at the intersection of **Boros Boulevard** and **Venturi Avenue**, in the Tukwet Canyon residential development in the City of Beaumont. This view encompasses a residential neighborhood and a portion of Segment 4, between El Casco Substation and I-10. Three transmission lines traverse the ridgelines that define the northern boundary of the Tukwet Canyon residential development.	**KOP 5** **Boros Boulevard** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-12A**



This image presents a **Visual Simulation** of the Proposed Project from **KOP 5** at the intersection of **Boros Boulevard**, and **Venturi Avenue**, in the Tukwet Canyon residential development. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. As shown in the simulation, the new structures would be more prominent due to their greater height, but the overall structural complexity of the ROW would be reduced.	**KOP 5** **Boros Boulevard** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-12B**

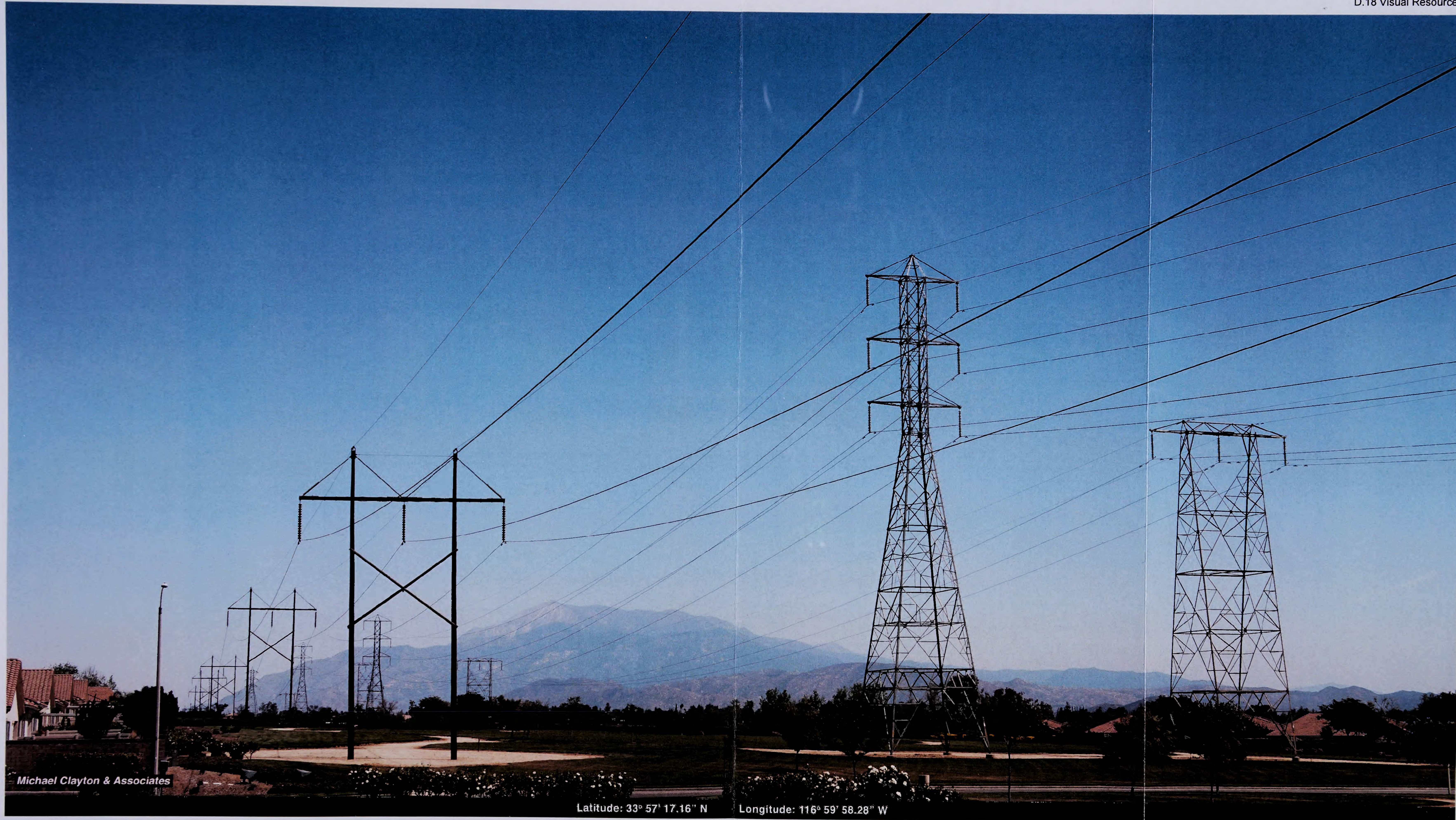


This image presents the **Existing View** to the northwest from **KOP 6** at the east end of **Stetson Community Park,** in the City of Beaumont. This view encompasses a residential ROW park setting and a portion of Segment 4, just east of I-10. Three transmission lines pass through this residential development, creating a ROW that has been converted to a community park.	**KOP 6** **Stetson Community Park** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-13A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 6** at the east end of **Stetson Community Park**, in the City of Beaumont. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. As shown in the simulation, the new structures would be more prominent due to their greater height, but the overall structural complexity visible from the park would be reduced.	**KOP 6** **Stetson Community Park** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-13B**

This image presents the **Existing View** to the northwest from **KOP 6A** on Sagura Road, in the Solera residential golf community in the City of Beaumont. This view of a portion of Segment 4 passing immediately behind a residential neighborhood is from the south side of the ROW and encompasses the group of towers immediately east of the group captured in the view from KOP 6. This image is representative of those south side (of the ROW) residential views that occur in close proximity to a structure grouping.	**KOP 6A** **Sagura Road** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-13C**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 6A** on Sagura Road, in the Solera residential golf community in the City of Beaumont. This simulation illustrates the replacement of three existing transmission lines with two transmission lines consisting of substantially taller structures. As shown in the simulation, the new structures would appear visually dominant due to their greater heights and close proximity to residences along the south side of the ROW.	KOP 6A Sagura Road Proposed Project Simulation	SCE West of Devers Upgrade Project **Visual Resources** **Figure D.18-13D**



This image presents the **Existing View** to the southeast from **KOP 7** at the **Solera Oakmont Clubhouse,** in the City of Beaumont. This view encompasses a residential golf community and portion of Segment 4, north of Oak Valley Parkway and east of I-10. Three transmission lines are prominently visible from the golf course and adjacent residences as they pass through this landscape. Mt. San Jacinto is prominently visible in the background.	**KOP 7** **Solera Oakmont Clubhouse** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-14A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 7** at the **Solera Oakmont Clubhouse,** in the City of Beaumont. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. The new structures would be slightly more prominent due to their greater height, but the overall structural complexity visible from the golf course, clubhouse, and adjacent residences would be reduced.	**KOP 7** **Solera Oakmont Clubhouse** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-14B**

This image presents the **Existing View** to the east-southeast from **KOP 8,** at the intersection of **Stargazer Street** and **Rose Avenue** in The Estates residential subdivision, in the City of Beaumont. This view encompasses a portion of the residential subdivision backing on to the existing ROW containing three prominently visible transmission lines. Mount San Jacinto is visible in the background.	**KOP 8** **The Estates** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-15A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 8,** at the intersection of **Stargazer Street** and **Rose Avenue**, in The Estates residential subdivision, in the City of Beaumont. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. The new structures would exhibit similar structural prominence, but the overall structural complexity of the ROW would be reduced.	**KOP 8** **The Estates** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-15B**

This image presents the **Existing View** to the southwest from **KOP 9,** on **Cedar Hollow Road**, just west of Cherry Avenue, in the City of Beaumont. This view encompasses a portion of the Segment 4 ROW as it passes through the residential areas of north Beaumont. The ROW contains three prominently visible transmission lines.	**KOP 9** **Cedar Hollow Road** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-16A**

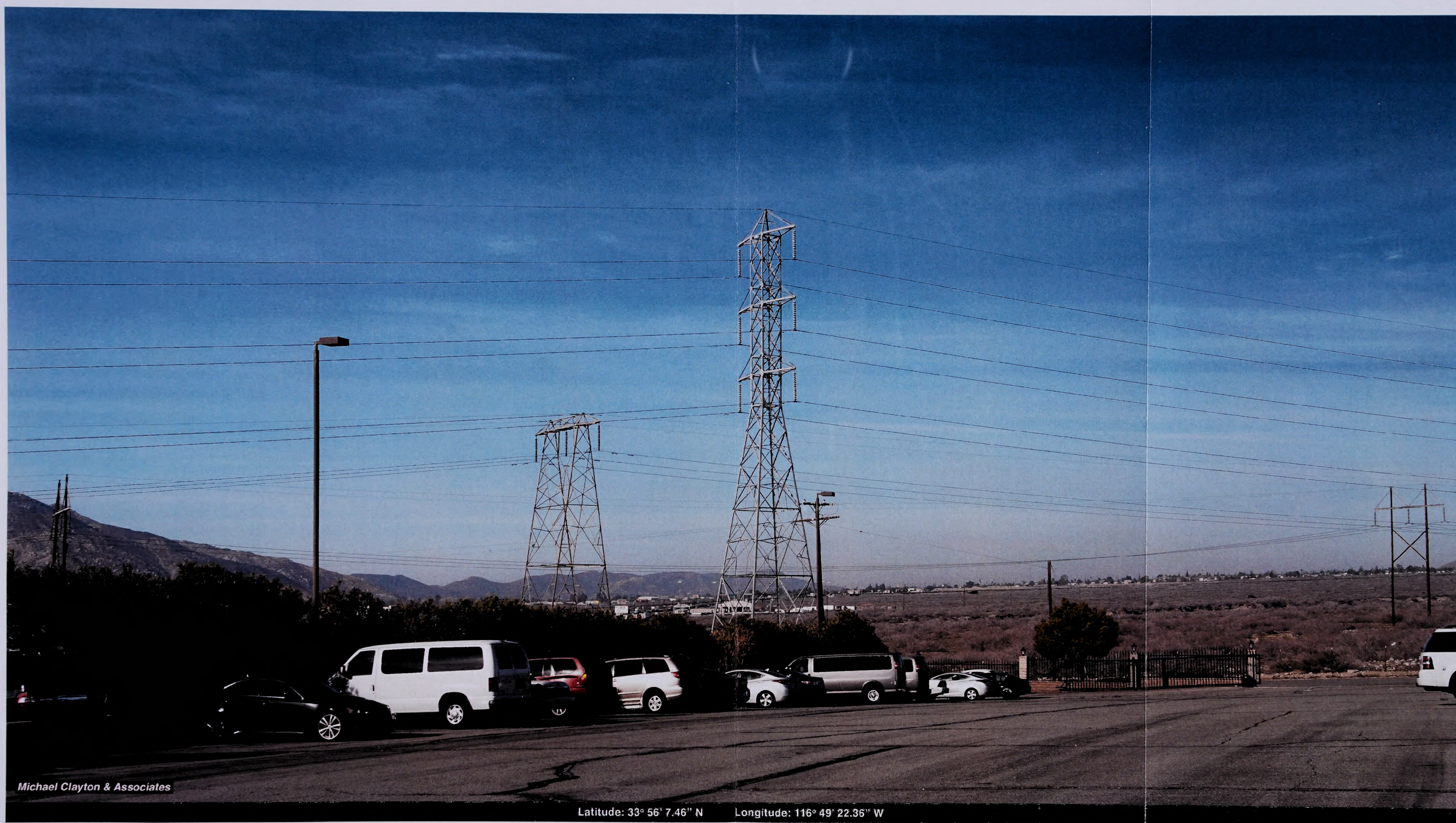
This image presents a **Visual Simulation** of the Proposed Project from **KOP 9,** on **Cedar Hollow Road**, just west of Cherry Avenue, in the City of Beaumont. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. As shown in the simulation, the new structures would exhibit similar structural prominence when viewed from the north, and the overall structural complexity of the ROW would be reduced.	**KOP 9** **Cedar Hollow Road** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-16B**

This image presents the **Existing View** to the southeast from **KOP 10,** on **Bluff Street**, in north Banning. This viewpoint is located at the border of Segment 4 and Segment 5. The view encompasses the western end of Segment 5 as it spans Bluff Street and and then passes into Morongo tribal lands north of the City of Banning. The ROW splits at this location, with two prominently visible transmission lines following the southern route west, and one transmission line following a northern route west.	**KOP 10** **Bluff Street** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-17A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 10,** on **Bluff Street**, in north Banning. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two taller tubular steel Pole (TSP) transmission lines of the same design. As shown in the simulation, the new structures would appear more massive, and visibly more prominent at greater distance compared to the lattice structures that are being replaced.	**KOP 10** **Bluff Street** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-17B**

This image presents the **Existing View** to the northeast from **KOP 11,** on **Hathaway Street**, at the entrance to the Summit Ridge Apartments, in the City of Banning. The view encompasses the view of the ROW as it passes across the southwest corner of the Morongo tribal lands, north of I-10 and adjacent to the eastern border of the City of Banning. The San Bernardino Mountains provide a backdrop of visual interest in views to the north and northeast.	**KOP 11** **Hathaway Street** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-18A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 11,** on **Hathaway Street**, at the entrance to the Summit Ridge Apartments, in the City of Banning. This simulation illustrates the introduction of two TSP transmission lines into the foreground of views from Hathaway Street and the adjacent residential development. The TSPs would appear more massive, and visibly more prominent compared to the more distant pole and lattice structures that are being replaced (not readily apparent above).	**KOP 11** **Hathaway Street** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-18B**



This image presents the **Existing View** to the southwest from **KOP 12,** at the **Morongo Community Center**. The view encompasses a portion of the Community Center parking lot and the ROW as it passes between the Community Center and I-10. The ROW contains three transmission lines, two consisting of lattice steel structures, and one wood-pole H-frame line.	**KOP 12** **Morongo Community Center** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-19A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 12,** at the **Morongo Community Center**. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two, slightly more distant TSP transmission lines of identical design. The new structures would be similar in height to the tallest existing lattice structures, but they would apear shorter and more numerous when viewed from the Community Center, owing to their greater viewing distance and the ROW alignment.	**KOP 12** **Morongo Community Center** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-19B**

This image presents the **Existing View** to the west from **KOP 13,** on **Haugen-Lehman Way**, just south of Amethyst Drive, in the residential community of Whitewater. This view encompasses a portion of the Segment 6 ROW as it passes through the central portion of Whitewater, which includes several residential enclaves extending from just east of the Morongo tribal lands eastward to SR 62. The ROW contains three prominently visible transmission lines including two lattice steel and one wood-pole facilities.	**KOP 13** **Haugen-Lehman Way** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-20A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 13,** on **Haugen-Lehman Way**, just south of Amethyst Drive, in the residential community of Whitewater. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. As shown in the simulation, the new structures would be somewhat more prominent due to greater heights and greater structural design complexity (lattice vs. pole).	**KOP 13** **Haugen-Lehman Way** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-20B**

This image presents the **Existing View** to the south from **KOP 14,** at the **Pacific Crest Trail (PCT) Parking Lot,** north of Haugen-Lehman Way and the residential community of White Water. This view encompasses a portion of the Segment 6 ROW that would span the PCT as it passes through White Water, approximately one mile south of the PCT parking lot and KOP 14. The PCT would pass through the western portion of the community before crossing under I-10, turning east, and then south toward Mount San Jacinto.

KOP 14
PCT Parking Lot
Existing View

SCE West of Devers Upgrade Project

Visual Resources
Figure D.18-21A

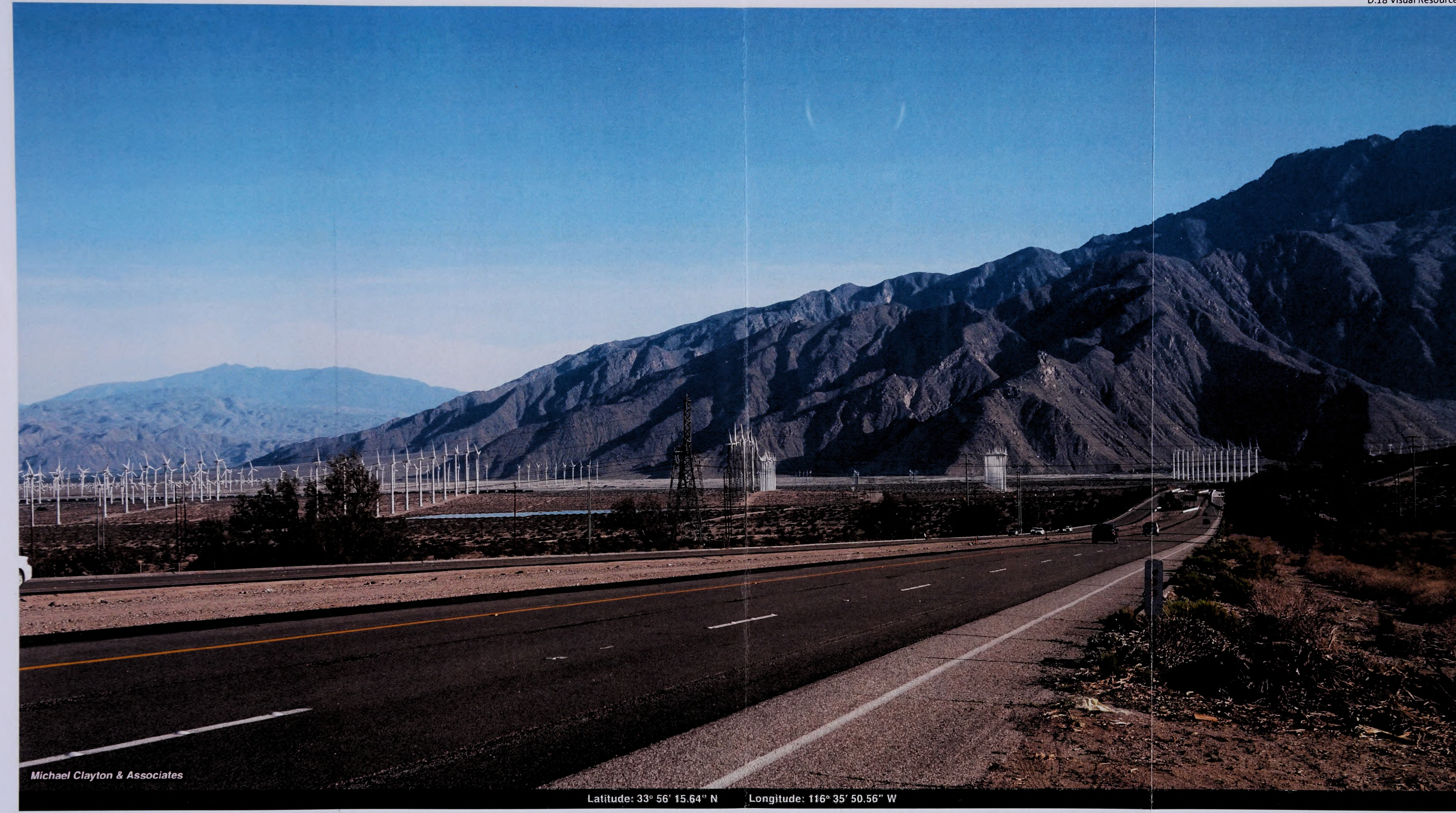
This image presents a **Visual Simulation** of the Project from **KOP 14,** at the **Pacific Crest Trail (PCT) Parking Lot**, north of Haugen-Lehman Way and the residential community of White Water. This simulation illustrates the replacement of three existing transmission lines of different design and size with two transmission lines of greater height but identical design. The new structures would be more noticeable from the PCT further south due to their greater heights and structural prominence and close proximity to the trail crossing.	**KOP 14** **PCT Parking Lot** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-21B**

This image presents the **Existing View** to the southeast from **KOP 15,** on **Whitewater Canyon Road**, just south of the residential enclave of Bonnie Bell, in the larger residential community of Whitewater, north of I-10 and west of SR 62. This view encompasses a portion of the Segment 6 ROW as it spans Whitewater Canyon and Whitewater Canyon Road. The ROW contains three transmission lines of different designs and heights, which are noticeably visible on the east canyon rim from Whitewater Canyon Road.	**KOP 15** **Whitewater Canyon Road** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-22A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 15,** on **Whitewater Canyon Road**, just south of the residential enclave of Bonnie Bell. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. As shown in the simulation, the new structures would be more prominent due to greater heights, but the overall structural complexity of the ROW would be slightly reduced.	**KOP 15** **Whitewater Canyon Road** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-22B**

This image presents the **Existing View** to the southeast from **KOP 16,** on **Painted Hills Road**, immediately east of Verbena, west of SR 62. This view encompasses the eastern portion of the Segment 6 ROW as it passes by the eastern-most portion of Whitewater, before spanning SR 62 and then continuing on to Devers Substation, just east of SR 62. The ROW contains three transmission lines though they are somewhat obscured by the complexity of the background wind turbines and transmission lines.	**KOP 16** **Painted Hills Road** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-23A**

This image presents a **Visual Simulation** of the Proposed Project from **KOP 16,** on **Painted Hills Road**, immediately east of Verbena, west of SR 62. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. As shown in the simulation, the new structures would be slightly more prominent due to greater heights.	**KOP 16** **Painted Hills Road** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-23B**



This image presents the **Existing View** to the southeast from **KOP 17,** on **Southbound SR 62**, just north of the ROW span of SR 62. This view encompasses the eastern portion of the Segment 6 ROW as it spans SR 62, an Officially Designated State Scenic Highway, and then continues on to Devers Substation, just east of SR 62. The ROW contains three transmission lines though they are somewhat obscured by the complexity of the background wind turbines and transmission lines.

KOP 17
Southbound SR 62
Existing View

SCE West of Devers Upgrade Project

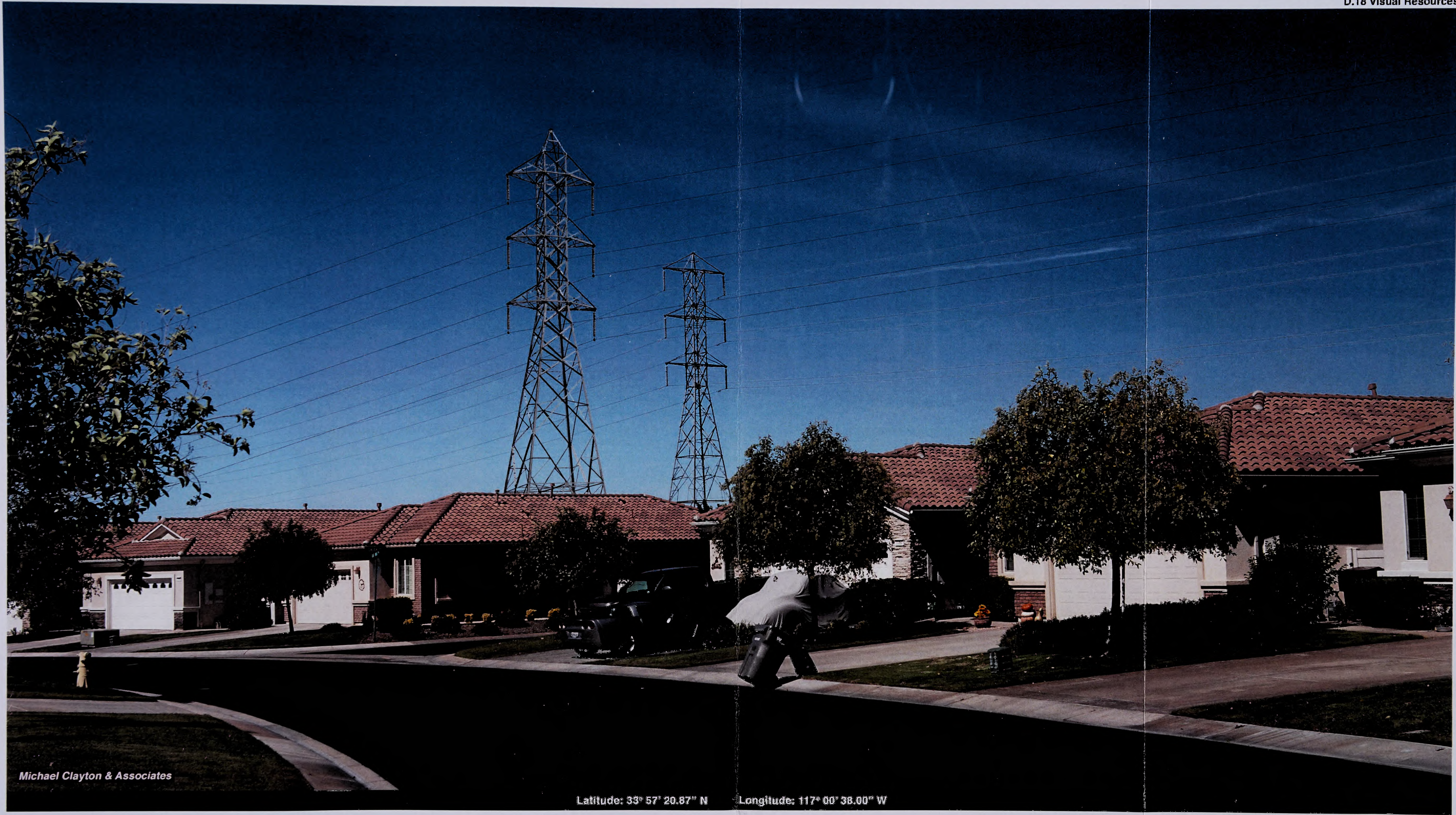
Visual Resources
Figure D.18-24A

This image presents a **Visual Simulation** of the Proposed Project from **KOP 17**, on **Southbound SR 62**, just north of the ROW span of SR 62. This simulation illustrates the replacement of three existing transmission lines of different design and size, with two transmission lines of greater height but identical design. As shown in the simulation, although the new structures would be slightly more prominent due to greater heights, the increased prominence would not be noticed by the casual observer.	**KOP 17** **Southbound SR 62** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-24B**

This image presents the **Existing View** to the north, from **KOP 18** on **Iowa Street,** in the City of Redlands. This view encompasses a portion of the Proposed SB-Redlands-Tennessee overhead 66 kV subtransmission line as it passes the Cottage Lane residential subdivision to the east. While there are no dominant overhead utility structures apparent in this suburban landscape, there are single-, wood-pole utility lines along Orange Avenue and a portion of Iowa Street. Also visible is a communication tower.	KOP 18 Northbound Iowa Street Existing View	SCE West of Devers Upgrade Project Visual Resources Figure D.18-25A

This image presents a **Visual Simulation** of a portion of the Proposed SB-Redlands-Tennessee overhead 66 kV subtransmission line, from **KOP 18** on **Iowa Street,** in the City of Redlands. The simulation illustrates the introduction of vertically prominent, light-weight steel poles into the suburban landscape along Iowa Street. As shown in the simulation, the new structures would be visually dominant features in views from Iowa Street and the adjacent Cottage Lane residential subdivision.	**KOP 18** **Northbound Iowa Street** **Visual Simulation**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-25B**

This image presents the **Existing View** to the northwest from **KOP 6A** on Sagura Road, in the Solera residential golf community in the City of Beaumont. This view of a portion of Segment 4 passing immediately behind a residential neighborhood is from the south side of the ROW and encompasses the group of towers immediately east of the group captured in the view from KOP 6. This image is representative of those south side (of the ROW) residential views that occur in close proximity to a structure grouping.	**KOP 6A** **Sagura Road** **Existing View**	**SCE West of Devers Upgrade Project** **Visual Resources** **Figure D.18-26A**



This image presents a **Visual Simulation** of the **Phased Build Alternative** from **KOP 6A** on Sagura Road, in the Solera residential golf community. This simulation illustrates the retenion of the existing double-circuit 220 kV transmission line and the introduction of a new 220 kV transmission line that would occupy the same location as the northern transmission line of the Proposed Project. This alternative would eliminate the southern-most structures of the Proposed Project and reduce overall structural prominence.	KOP 6A Sagura Road Phased Build Simulation	SCE West of Devers Upgrade Project **Visual Resources** **Figure D.18-26B**

D.19 Water Resources and Hydrology

This section describes the affected environment for Water Resources and Hydrology in Section D.19.1, and presents the relevant regulations and standards in Section D.19.2. Sections D.19.3 through D.19.5 describe the impacts of the Proposed Project and the alternatives. Section D.19.6 presents the mitigation monitoring requirements, and Section D.19.7 lists references cited.

D.19.1 Environmental Setting / Affected Environment

This section describes the affected environment for water resources and hydrology, including surface water and groundwater.

D.19.1.1 Regional Setting and Approach to Data Collection

The information presented in this section was gathered from a guided site visit conducted on March 4, 2014, as well as information provided in the Proponent's Environmental Assessment and associated documents dated October 25, 2013. The data includes consideration of the preliminary design for the Proposed Project, available topographic maps, and water resources data available from the California Department of Water Resources, United States Geological Survey, Federal Emergency Management Agency, Western Regional Climate Center, California State Water Resources Control Board, Regional Boards, and local jurisdictions. Specific data sources are cited in the text, and listed in Section D.19.7.

Climate

The project area climate is characterized by hot, dry summers and mild winters. Annual precipitation is relatively uniform at approximately 13 to 20 inches over the western 30 miles of the project route, dropping to approximately 5.5 inches per year at the eastern end of the route. Rainfall is seasonal, with most rain occurring in the winter months. About 70% of total precipitation falls during December through March throughout the entire route. Average snowfall is less than 1 inch annually. June, July and August, with only about 3% of total annual precipitation, are the driest months at the west end of the route. May, June and July are the driest months at the eastern end, with about 3% of the annual total. January is the coldest month, averaging a low of 42 degrees at the east end of the route and 39 degrees at the west end. The hottest month, July, averages a high of 108 degrees at the east end of the route, and 95 degrees at the west end (WRCC, 2014).

Streams and Watercourses

Major streams and watercourses crossed by the project route are identified in Table D.19-1. Figures D.19-1a through D.19-1i (presented at the end of this section) show the locations of most watercourses on a topographic base map.

Table D.19-1. Surface Water Features Crossed by the Proposed Project

Surface Water Feature	Segment/ Milepost (MP)	Stream Type	Comments
Mission Zanja Creek	Segment 1/MP SB 0.8	Urban	Constructed channel
San Timoteo Creek	Segment 1/MP SB 1.9	Urban	Constructed channel.
Stream Channel	Segment 1/MP SB 3.1	Natural channel	Two project crossings of this channel within a distance of approximately 230 feet.
Reche Canyon	Segment 2/MP 2.0	Urban	None

Table D.19-1. Surface Water Features Crossed by the Proposed Project

Surface Water Feature	Segment/ Milepost (MP)	Stream Type	Comments
Stream Channel	Segment 2/MP 3.0	Natural channel	None
Stream Channel	Segment 3/MP 5.8	Natural channel	Steep hilly terrain. There are several smaller drainageways between this and the previous channel.
Various Stream Channels	Segments 3 and 4/MP 5.8 to 16	Natural channels	At least 30 natural drainage courses in steep hilly terrain.
San Timoteo Creek	Segment 4/MP15.9	Natural channel	Two crossings at this location.
Stream Channel	Segment 4/MP 16.1	Natural channel	Creek runs parallel to and in the same canyon bottom as San Timoteo Creek.
Stream Channel	Segment 4/MP 16.3	Natural channel	Creek is ill-defined in a wide shallow channel at this point.
Stream Channel	Segment 4/MP 19	Natural channel	Channel has been highly modified by urbanization except for a 300-foot segment upstream of I-10. Tower D-V 126 would be placed in this segment.
Stream Channel	Segment 4/MP 19.6	Urban channel	None
Stream Channel	Segment 4/MP 19.9	Urban channel	Channel is within a golf course.
Little San Gorgonio Creek	Segment 4/MP 20.5	Urban channel	Channel is within a golf course.
Noble Creek	Segment 4/MP 20.9	Urban channel	None
Stream Channel	Segment 4/MP 21.5	Natural channel	None
Potrero Creek	Segment 4/MP 22.4	Natural channel	First of two Potrero Creeks. Drains to San Jacinto River
Smith Creek	Segment 4/MP 23.9	Natural channel	None
Montgomery Creek	Segment 4/MP 25.3	Natural channel	None
Stream Channel	Segment 4/MP 25.6	Natural channel	None
Stream Channel	Segment 4/MP 26.1	Natural channel	None
Stream Channel	Segment 4/MP 26.7	Natural channel	None
San Gorgonio River	Segment 5/MP 27.6	Natural channel	Active channel is approximately 400 feet wide along the project alignment. New structures would be placed outside the river channel.
San Gorgonio River	Segment 5/MP 28.2	Natural channel	Active channel is approximately 300 feet wide along the project alignment. New structures would be placed outside the river channel.
Stream Channel	Segment 5/MP 28.2 to 30.4	Natural channel	Several minor stream crossings.
San Gorgonio River	Segment 5/MP 30.4	Natural channel/ alluvial fan	Active channel is approximately 850 feet wide along the project alignment. Old channel braids from past overflows are as far as 1,500 feet (measured along the project route) outside the main channel at the location of the crossing. Four new structures would be located within 100 feet of the main active channel. Another two would be located within the area of potential braiding.
Potrero Creek	Segment 5/MP 30.5	Natural channel/ alluvial fan	Second of two Potrero Creeks. Drains to San Gorgonio River
Stream Channel	Segment 5/MP 32.5	Natural channel	None

Table D.19-1. Surface Water Features Crossed by the Proposed Project

Surface Water Feature	Segment/ Milepost (MP)	Stream Type	Comments
Millard Canyon Creek	Segment 5/MP 33	Natural channel/ alluvial fan	Braided channel is approximately 860 feet wide along the project alignment.
Stream Channel	Segment 5/MP 33.6	Natural channel/ alluvial fan	None
Deep Canyon	Segment 5/MP 33.8	Natural channel/ alluvial fan	Several stream braids present at this location.
Lion Canyon	Segment 5/MP 34.8	Natural channel/ alluvial fan	Several stream braids present at this location.
Stream Channel	Segment 5/MP 35.7	Natural channel/ alluvial fan	None
Stream Channel	Segment 5/MP 36.0	Natural channel/ alluvial fan	None
Stream Channel	Segment 5/MP 36.1	Natural channel/ alluvial fan	None
Stream Channel	Segment 6/MP 37.0	Natural channel/ alluvial fan	None
Stubble Canyon	Segment 6/MP 37.4 to 38.1	Natural channel/ alluvial fan	Stubble Canyon Wash has several braids crossing this portion of the route. 9 new structures to be constructed within the area encompassed by the braided channels, but not within active channels.
Cottonwood Canyon	Segment 6/MP 38.8	Natural channel/ alluvial fan	None
Stream Channel	Segment 6/MP 38.8 to 41.7	Natural channel	Several minor watercourses in hilly terrain.
Whitewater River	Segment 6/MP 41.7	Natural channel/ alluvial fan	No structures in the active channel.
Super Creek	Segment 6/MP 42.7	Natural channel/ alluvial fan	Braided desert channel spans approximately 550 feet along the project alignment.
Stream Channel	Segment 6/MP 44.5 to 45.0	Natural channel/ alluvial fan	Several minor watercourses.
Mission Zanja Creek	San Bernardino–Redlands-Timoteo Line	Urban	Constructed channel.
Mission Zanja Creek	San Bernardino–Redlands-Tennessee Line	Urban	Constructed channel.
Morey Arroyo	San Bernardino–Redlands-Tennessee Line	Urban	Constructed channel.

Source: USGS, 2014a; SCE, 2014; SCE, 2013. Note: SCE prepared a Drainage Assessment (described in EIS Section D.4.1), as preliminary information related to potential jurisdictional waters under Section 404 of the Clean Water Act, to support project design. After final design, SCE will prepare a Jurisdictional Delineation Report of the project's areas of impact.

Watercourses along the eastern portion of the route are all tributary to the Whitewater River, which drains southeastward toward the Salton Sea (an inland lake). All streams that cross the project alignment east of Milepost (MP) 23, near Beaumont, contribute tributary drainage to the Whitewater River. These streams are generally dry most of the year, with flow occurring mostly in response to rainfall events. The larger streams originating in the nearby San Bernardino Mountains may have semi-permanent to permanent flow from snowmelt and rainfall in the mountains. These include the Whitewater River, Cottonwood

Canyon, Stubble Canyon, Lion Canyon, Deep Canyon, Millard Canyon, and the San Gorgonio River. The Whitewater River is perennial in the area of the project (USGS, 2014b).

Many of the watercourses east of MP 23 are braided alluvial streams on alluvial fans. These stream channels are highly subject to erosion and channel shifting, with flow potentially taking different channel paths, or forming new channels, from one flood to the next. The Millard Canyon channel, at project MP 33, has at least three potentially active braids that span 860 feet of the transmission line alignment. Within 0.5 miles downstream of the project crossing, the channel braids expand to a total width of more than 2,000 feet. Comparison of historical aerial photographs indicates that in the vicinity of the San Gorgonio River crossing at MP 30.4, the south channel bank eroded approximately 50 feet between 2004 and 2005. At another point, approximately one-half mile downstream, lateral erosion in that same interval was approximately 130 feet.

Potrero Creek at MP 22.4 drains south to the San Jacinto River, which drains into Lake Elsinore.

West of MP 23, all watercourses drain toward the Pacific Ocean. The Santa Ana River, not crossed by the project but located within 1,000 feet of the Vista Substation, is the main watercourse conducting flow to the Pacific Ocean. All streams that cross the project alignment west of MP 23 contribute tributary drainage to the Santa Ana River, mostly by way of San Timoteo Creek, which enters the Santa Ana River approximately 2.3 miles southwest of the San Bernardino Substation. Reche Canyon and mission Zanja drain directly into the Santa Ana River.

Natural stream crossings west of MP 23 (eastern Beaumont) are generally well-defined channels lined with vegetation. Streamflow is seasonal with most flow in the winter and activated by rainfall. The larger watercourses, including Reche Canyon, mission Zanja, and San Timoteo Creek, are more likely to have summer flow, possibly including urban runoff in urban areas, than the smaller streams. San Timoteo Creek receives treated wastewater from the City of Beaumont and the Yucaipa Valley Water District (YVWD, 2014, RWQCBSAR, 2009). Stream channels west of MP 23 (Banning and west) can be subject to lateral erosion, but generally do not exhibit the braided morphology common on the alluvial fans to the east. Many have been confined and stabilized into lined and constructed urban channels (urban in Table D.19-1) that have little susceptibility to lateral erosion.

There are numerous minor local drainageways and gullies within the project right-of-way but not listed in Table D.19-1. These minor drainageways have been inventoried and mapped in the PEA Drainage Assessment Report (SCE, 2013) for the purposes of making a preliminary determination of which watercourses may come under the jurisdiction of the U.S. Clean Water Act.

Floodplains

Floodplains are areas in and adjacent to stream channels that can be subject to flooding by flows in or overflowing the main channel. Floodplains are usually represented by a flood return period such as 50-year or 100-year, meaning the flood discharge recurs on average once every 50 or 100 years. Longer return periods represent larger floods. The 100-year flood is used for flood insurance, regulatory, and floodplain management purposes.

Federal Emergency Management Agency (FEMA, 2014) 100-year floodplains have been mapped for some of the watercourses crossed by the proposed route. Figures D.19-1a through D.19-1i show the location of mapped FEMA regulatory floodplains along the project route.

The absence of a mapped floodplain does not necessarily mean there is no flood or erosion hazard. For example, the San Gorgonio River floodplain in the vicinity of MPs 28 to 31 on Figure D.19-1g shows several disjointed triangular-shaped floodplains where the floodplain was mapped for the City of Banning. The San Gorgonio River floodplain was not mapped for the adjacent unincorporated Riverside County.

Surface Water Quality

Water quality along the route is generally good. None of the streams crossed by the project is listed as impaired in the California State Water Resources Control Board Final 2010 Integrated Report (SWRCB, 2010). The nearest downstream impaired water body is the Santa Ana River Reach 4, located approximately 1,000 feet from the Vista Subbasin, and listed as impaired for pathogens, salinity, total dissolved solids (TDS), and chlorides. All of the streams crossing the project west of MP 22 contribute tributary flow to the Santa Ana River at or above Reach 4. Potrero Creek at project MP 22.4 drains to streams that eventually reach Lake Elsinore, which is listed as impaired for nutrients, organic enrichments, polychlorinated biphenyls (PCBs, industrial compounds used in transformers and other equipment), and sediment toxicity. Lake Elsinore is approximately 30 miles distant from the location of the Potrero Creek crossing of the project. All of the streams crossing the project east of MP 23 drain to streams that eventually reach the Salton Sea, which is listed as impaired for arsenic, chlorpyrifos (an insecticide), DDT, enterococcus (a bacteria that can cause illness), nutrients, and salinity. The Salton Sea is more than 40 miles distant from the nearest point on the project route.

Surface Water Beneficial Uses

The California State Water Resources Control Board designates beneficial uses of surface waters in order to protect these uses against water quality degradation. Beneficial uses for the watercourses crossed by the project are described in the Water Quality Control Plan for the Colorado River Basin (RWQCBCRB, 2014) and the Water Quality Control Plan for the Santa Ana River Basin (RWQCBSRB, 1995). Listed beneficial uses are:

- **San Timoteo Creek:** Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat and, intermittently in the lower reaches, Agriculture Supply.
- **Little San Gorgonio Creek:** Municipal and Domestic Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Cold Freshwater Habitat, and Wildlife Habitat and.
- **Other Tributaries to San Timoteo Creek:** Municipal and Domestic Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat. All of these are intermittent beneficial uses.
- **Potrero Creek (MP 22.4):** Municipal and Domestic Supply, Agriculture Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat. All of these are intermittent beneficial uses.
- **Millard Canyon Creek:** Municipal and Domestic Supply, Agriculture Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat.
- **Potrero Creek (MP 30.5):** Agriculture Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat.
- **San Gorgonio River:** Municipal and Domestic Supply, Agriculture Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Cold Freshwater Habitat, and Wildlife Habitat.
- **Whitewater River:** Municipal and Domestic Supply, Agriculture Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat (intermittent), Cold Freshwater Habitat, and Wildlife Habitat.

- **Unlisted Perennial and Intermittent Streams (Colorado River Basin):** Groundwater Recharge, Water Contact Recreation (perennial streams), Non-Contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat.
- **Unlisted Ephemeral Washes (Colorado River Basin):** Groundwater Recharge, Non-Contact Water Recreation, and Wildlife Habitat. All of these are intermittent beneficial uses.

Groundwater

The project route crosses 7 groundwater basins, shown on Figures D.19-1a through D.19-1i. Groundwater basins west of MP 23.3 (Beaumont) are associated with the Upper Santa Ana Valley. Groundwater Basin. Groundwater basins in the eastern portion of the route, east of MP 23.3, are subbasins of the Coachella Valley Groundwater Basin. The following groundwater basin descriptions are based on California Groundwater Bulletin 118 (DWR, 2003) except as otherwise indicated:

Upper Santa Ana Valley Groundwater Basin

- **Upper Santa Ana Valley Bunker Hill Subbasin:** The Upper Santa Ana Valley Bunker Hill Subbasin underlies the San Bernardino Valley in southwestern San Bernardino County and northwestern Riverside County. The surface area of the basin is 120 square miles. Groundwater is found in Holocene and Pleistocene alluvial deposits. The depth to groundwater ranges from approximately 102 feet to 201 feet below ground surface (SCE, 2013). Major recharge comes from the Santa Ana River, Mill Creek, Lytle Creek and, to a lesser extent, Cajon Creek and San Timoteo Creek. Water levels have been relatively stable except in the far eastern and northwestern portion of the basin, where there have been declines. Water quality is generally good for most uses. The water contains calcium bicarbonate (a characteristic of what is commonly referred to as "hard" water), with TDS averaging 324 mg/l (milligram per liter, equivalent to parts per million, or ppm). There are several contamination plumes in this subbasin, including:
  - The 150,000-acre-foot Redlands Plume primarily composed of trichloroethylene (TCE)
  - The 100,000-acre-foot Norton Air Force Base plume consisting of TCE and perchloroethylene (PCE), both of which are toxic chlorinated hydrocarbons
  - The Newark and Muscoy plumes of TCE and PCE in northern San Bernardino
  - The Santa Fe plume primarily of petroleum based contaminates.
- **Upper Santa Ana Valley Riverside-Arlington Subbasin:** The Upper Santa Ana Valley Riverside-Arlington Subbasin underlies part of the upper Santa Ana Valley in southwestern San Bernardino County and northwestern Riverside County. The surface area of the basin is 92 square miles. Groundwater is found in Quaternary alluvial deposits. The depth to groundwater ranges from approximately 62 feet to 74 feet below ground surface (SCE, 2013). Major recharge is from the Santa Ana River, adjacent basin underflow, and irrigation return flow. Water levels have been relatively stable to slightly declining. The water is calcium-sodium bicarbonate in quality, with TDS averaging 463 mg/l.
- **Upper Santa Ana Valley Rialto-Colton Subbasin:** The Upper Santa Ana Valley Rialto-Colton Subbasin underlies a portion of the upper Santa Ana Valley in southwestern San Bernardino County and northwestern Riverside County. The surface area of the basin is 47 square miles. Groundwater is found in Holocene and Pleistocene alluvial deposits. The depth to groundwater ranges from approximately 56 feet to 128 feet below ground surface (SCE, 2013). Major recharge areas are Lytle Creek in the northwestern part of the basin, Reche Canyon in the southeastern part, and the Santa Ana River in the south-central part. Water levels fluctuate with precipitation and runoff. Water Quality is generally good, with TDS averaging 230 mg/l.

- **Upper Santa Ana Valley San Timoteo Subbasin:** The Upper Santa Ana Valley San Timoteo Subbasin underlies Cherry Valley and the City of Beaumont in southwestern San Bernardino and northwestern Riverside Counties. Surface area of the basin is 114 square miles. Groundwater is found in alluvium and San Timoteo Formation. Depth to groundwater ranges from approximately 85 feet to 612 feet below ground surface (SCE, 2013). Recharge is derived mainly from subsurface inflow and percolation of precipitation, runoff, and imported water. Spreading grounds are used to percolate imported and runoff water. Water levels in domestic wells are seasonally variable, with declines in the Cherry Valley area. Water quality is generally good, with TDS averaging 253 mg/l. Groundwater character is sodium bicarbonate, calcium bicarbonate, calcium-magnesium bicarbonate or sodium chloridesulfate depending on location.

Coachella Valley Groundwater Basins

- **Coachella Valley San Gorgonio Pass Subbasin:** The Coachella Valley San Gorgonio Pass Subbasin lies entirely within the San Gorgonio Pass. Surface area of the basin is 60 square miles. The water-bearing zones consist primarily of Pleistocene and Holocene alluvial deposits and Pliocene to Pleistocene age San Timoteo Formation. Depth to groundwater ranges from approximately 47 feet to 513 feet below ground surface (SCE, 2013). Recharge is from surface runoff, mainly from the San Gorgonio River. Water quality is generally good, with TDS around 106 to 205 mg/l. Groundwater character is calcium-sodium bicarbonate.
- **Coachella Valley Indio Subbasin:** The Coachella Valley Indio Subbasin is located in the desert region northwest of the Salton Sea. Surface area of the basin is 525 square miles. The water-bearing zones consist primarily of Pleistocene and Holocene alluvial deposits. Groundwater depth ranges from approximately 363 feet to 408 feet below ground surface (SCE, 2013). Recharge is derived mainly from surface runoff, subsurface inflow, and imported Colorado Aqueduct water delivered to the Whitewater Spreading Grounds. Water levels have been declining due to urbanization and groundwater pumping since the 1980s despite the Colorado River imports. Water quality is generally good, with TDS around 300 mg/l. Native groundwater character is calcium bicarbonate. Groundwater near major faults contains elevated levels of fluoride, and there is a nitrate plume in the vicinity of Cathedral City and La Quinta.
- **Coachella Valley Mission Creek Subbasin:** The Coachella Valley Mission Creek Subbasin is located in the desert region northwest of the Salton Sea. Surface area of the basin is 76 square miles. The water-bearing zones consist primarily of old alluvial fan and terrace deposits. Recharge is derived mainly from runoff from the surrounding highlands which includes flow from the Whitewater and San Gorgonio Rivers. Water levels in domestic wells vary from 140 to 721 feet below ground surface with an average depth to water of 372 feet. Water levels have been declining at a rate of 0.5 to 1.5 feet per year since the early 1950s due to scarce annual precipitation and groundwater extractions. Water quality is generally good, with TDS below 500 mg/l. Groundwater ranges in character from a calcium-magnesium bicarbonate type in the northwest to sodium chloridesulfate type in the southeast.

D.19.1.2 Environmental Setting by Segment

This section describes the specific environmental setting for surface water and groundwater for each of the 6 segments of the Proposed Project. Refer to Table D.19-1 for specific water body information for each segment.

Segment descriptions 1 to 6 refer to the surface water and groundwater setting for the new 220 kV transmission line and structures, and associated substations. The setting for the 66 kV Subtransmission Line improvements, the Tennessee Substation, and new telecommunication line features outside the existing transmission right-of-way, are described separately as applicable to each segment.

D.19.1.2.1 Segment 1: San Bernardino

Streams and Watercourses

Segment 1 is illustrated on Figures D.19-1a and D.19.1b. It crosses Mission Zanja Creek and San Timoteo Creek (Table D.19-1). Both watercourses are in constructed urban channels approximately 75 to 90 feet wide, designed to convey flow and protect against flooding and erosion. Within Segment 1, the proposed San Bernardino–Redlands-Timoteo Line crosses Mission Zanja Creek. The proposed San Bernardino–Redlands-Tennessee Line crosses Mission Zanja Creek and Morey Arroyo.

Local drainage consists primarily of street flow in the urban area north of Beaumont Avenue (approximately MP SB 2.8). There are several natural local drainageways in the undeveloped land between Beaumont Avenue and San Bernardino Junction that are formed by minor canyons in the local hills. These are all small dry watercourses with total length of only a few hundred feet from the location of the project crossing to the headwaters.

Floodplains

Mission Zanja and San Timoteo Creeks have mapped FEMA floodplains within this segment. Both floodplains are confined to the constructed channels at the location of the Segment 1 crossings. FEMA has not mapped the extent of the floodplains along the small drainageways south of Beaumont Avenue.

Groundwater

All but approximately the southernmost 0.5 miles of this segment is in the Upper Santa Ana Valley Bunker Hill Groundwater Subbasin. The southernmost half mile is in the Upper Santa Ana Valley San Timoteo Groundwater Subbasin.

D.19.1.2.2 Segment 2: Colton and Loma Linda

Streams and Watercourses

Segment 2 (illustrated on Figure D.19-1b) crosses Reche Canyon near MP 2 and an unnamed stream channel at MP 3 (Table D.19-1). Reche Canyon flow is in a constructed channel approximately 50 feet wide at the location of the crossing. The unnamed drainageway crossing is a natural channel with headwaters approximately 1.3 miles upstream of the crossing location.

Local drainage along this segment consists of several natural local drainageways formed by minor canyons in the local hills. These small dry watercourses in steep terrain have total length ranging from only a few hundred feet to approximately 0.8 miles from the location of the project crossing to the headwaters.

Floodplains

Reche Canyon has a mapped FEMA floodplain approximately 210 feet wide within this segment, indicating that the constructed channel is not adequate to contain the 100-year discharge. The extent of the floodplain for the crossing at MP 3.0 has not been mapped by FEMA.

Groundwater

Segment 2 lies above the San Timoteo, Rialto-Colton, and Riverside-Arlington groundwater subbasins of the Upper Santa Ana Valley Groundwater Basin.

D.19.1.2.3 Segment 3: San Timoteo Canyon

Streams and Watercourses

Segment 3 (illustrated on Figures D.19-1b through D.19-1-d) crosses a series of unnamed stream channels in the steep, hilly terrain known as the San Timoteo Badlands (Crofton Hills). These are all local streams with relatively small watersheds, and are typically dry most of the year. Total stream length from the location of the project crossing to the headwaters ranges from a few hundred feet to approximately 1.5 miles. Most of the streams are in a natural condition, although several have been modified by minor development. All of these streams drain into San Timoteo Creek within approximately 0.25 to 1 mile of the project crossing.

Floodplains

There are no mapped FEMA floodplains in Segment 3.

Groundwater

All of Segment 3 lies above the Upper Santa Ana Valley San Timoteo Groundwater Basin.

D.19.1.2.4 Segment 4: Beaumont and Banning

Streams and Watercourses

Segment 4 (illustrated on Figures D.19-1e and D.19-1f) crosses San Timoteo Creek, Little San Gorgonio Creek, Noble Creek, Potrero Creek, Smith Creek, Montgomery Creek, and several unnamed drainageways as indicated in Table D.19-1. With the exception of San Timoteo Creek, all of these streams have their origin in or at the foothills of the San Bernardino Mountains to the north of the project. San Timoteo Creek flows westward through a flat-bottomed valley roughly 0.25 to 0.5 miles wide between low hills. Most of the streams originating in the area of the San Bernardino Mountains flow generally southward on a sloping alluvial plain. Those stream crossings that are in the Beaumont area, including Little San Gorgonio Creek, Noble Creek and two unnamed channels at MPs 19.6 and 19.9, are in constructed urban channels. The rest are in a natural condition at the location of the project.

Segment 4 includes the divide, at approximately MP 22, between streams that flow toward the Pacific Ocean, and those that flow toward the Salton Sea (or Lake Elsinore in the case of Potrero Creek, as described above). There are numerous small local drainageways originating in the hills at the western end of this segment, or on the alluvial plain or foothills of the San Bernardino Mountains.

Floodplains

Potrero Creek adjacent to Cherry Avenue (MP 22.4) is the only mapped FEMA floodplain in Segment 4 (Figure D.19-1f). At the Potrero Creek crossing the flooding appears to be sheet flow approximately 300 feet wide at the location of the project crossing. Several streams, including Noble Creek, the unnamed stream at MP 21.5, and Smith Creek are mapped either upstream or downstream of the project route. The mapped Smith Creek floodplain is approximately 1 mile wide at a point 1,000 feet downstream of the project route. There are no topographic features between the project route and the mapped floodplain that could be expected to substantially affect floodplain width.

Groundwater

The western portion of Segment 4 lies above the Upper Santa Ana Valley San Timoteo Groundwater Basin. The eastern portion (east of MP 23) lies above the Coachella Valley San Gorgonio Pass Groundwater Basin.

D.19.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

Streams and Watercourses

Segment 5 (illustrated on Figures D.19-1f through D.19-1h) crosses the San Gorgonio River in three places, as well as Potrero Creek (separate from the Segment 4 Potrero Creek), Millard Canyon Creek, Deep Canyon, Lion Canyon, and several unnamed drainageways, as indicated in Table D.19-1. All of these streams have their origin in or near the foothills of the San Bernardino Mountains to the north of the project, and all flow generally southward to southwestward toward the Salton Sea on a sloping alluvial plain. All of the streams exhibit characteristics of braided alluvial fan flow and natural instability. Braided channels can be hundreds of feet wide as indicated in Table D.19-1. There are numerous small local drainageways originating on the alluvial plain or foothills of the San Bernardino Mountains.

Floodplains

The San Gorgonio River within the City of Banning (Figure D.19-1g) is the largest mapped floodplain within this segment. Approximately 2,300 linear feet of the project route is within the 100-year floodplain of the San Gorgonio River between MPs 28 and 29, and another 3,350 feet is within the mapped floodplain between MPs 29 and 31. Approximately 1,200 feet of the project route is within the mapped floodplain of Millard Canyon Creek at MP 33. None of the other stream floodplains have been mapped along this segment.

Groundwater

All of Segment 5 lies above the Coachella Valley San Gorgonio Pass Groundwater Subbasin.

D.19.1.2.6 Segment 6: Whitewater and Devers

Streams and Watercourses

Segment 6 (illustrated on Figures D.19-1h and D.19-1i) crosses Stubble Canyon (Stubble Creek), Cottonwood Canyon, the Whitewater River, Super Creek, and several unnamed drainageways as indicated in Table D.19-1. All of these streams have their origin in or near the foothills of the San Bernardino Mountains to the north of the project, and all flow generally southward to southwestward toward the Salton Sea on a sloping alluvial plain. All of the streams exhibit characteristics of braided alluvial fan flow and natural instability. Braided channels can be very wide as indicated by the example of Stubble Creek, which has active braids spanning a width of approximately 3,700 feet at the location of the project crossing. There are numerous small local drainageways originating on the alluvial plain or foothills of the San Bernardino Mountains. The Colorado River Aqueduct, operated by the Metropolitan Water District of Southern California, crosses Segment 6 at approximately MP 37.5. The aqueduct is in an underground conduit at this location.

Floodplains

Stubble Creek is the only mapped floodplain within this segment. Approximately 4,000 linear feet of the project route is within the 100-year floodplain of Stubble Creek in the vicinity of MP 38 (Figure D.19-1h).

Groundwater

Segment 6 lies above the Coachella Valley San Gorgonio Pass, Coachella Valley Indio, and Coachella Valley Mission Creek groundwater basins (Figures D.19-1h and D.19.1i).

D.19.1.2.7 San Bernardino–Redlands-Timoteo 66 kV Line

Streams and Watercourses

The San Bernardino–Redlands-Timoteo Line crosses Mission Zanja Creek approximately 0.25 miles upstream of Segment 1. At this location Mission Zanja Creek is in a constructed urban channel approximately 50 feet wide, designed to convey flow and protect against flooding and erosion. Local drainage along this segment consists of street flow.

Floodplains

The Mission Zanja floodplain is mapped within this segment and extends to the north out of the constructed channel to a width of approximately 400 feet in this location.

Groundwater

This segment is over the Upper Santa Ana Valley Bunker Hill Groundwater Subbasin.

D.19.1.2.8 San Bernardino–Redlands-Tennessee 66 kV Line

The San Bernardino–Redlands-Tennessee Line crosses Mission Zanja Creek and the Morey Arroyo. The Mission Zanja is in constructed urban channels approximately to 65 feet wide, designed to convey flow and protect against flooding and erosion. The Morey Arroyo is in a semi-natural urban channel, approximately 25 feet wide, overgrown with riparian vegetation. Local drainage along this segment consists of street flow.

Floodplains

The Mission Zanja and Morey Arroyo floodplains are mapped within this segment. The Mission Zanja floodplain extends to the north out of the constructed channel approximately 850 feet at this location. The Morey Arroyo floodplain extends to the north and south out of the constructed channel approximately 660 feet at this location.

Groundwater

This segment is over the Upper Santa Ana Valley Bunker Hill Groundwater Subbasin.

D.19.1.2.9 Tennessee Substation

There are no surface water resources at the Tennessee Substation. All drainage is local street flow. The substation is above the Upper Santa Ana Valley Yucaipa Groundwater Subbasin. Groundwater at this location is approximately 160 feet below the ground surface.

D.19.1.2.10 Telecommunications Features

New telecommunication features are shown in Figures B-15a to B-15e. The proposed overhead telecommunications routes shown in Figure B-15a, associated with the San Bernardino Substation in Segment 1, crosses Mission Zanja Creek, which at the location of the crossings is a designed and constructed channel approximately 50 feet wide. Local drainage consists of street flow. The Mission Zanja floodplain is approximately 400 to 600 feet wide in this location. New telecommunications features at the San Bernardino Substation have no hydrologic features except for local street flow. All of these features are over the Upper Santa Ana Valley Bunker Hill Groundwater Subbasin.

The proposed underground route shown in Figure B-15b, associated with the Vista Substation, has no hydrologic features except for local street flow. This route is over the Upper Santa Ana Riverside-Arlington Groundwater Subbasin.

The proposed underground route shown in Figure B-15c, associated with the El Casco Substation, has no hydrologic features except for local flow. This route is over the Upper Santa Ana San Timoteo Groundwater Subbasin. The proposed overhead route shown in Figure B-15c would be on existing poles in a line that parallels San Timoteo Creek.

The proposed overhead route shown in Figure B-15d, associated with the Maraschino Substation, crosses San Timoteo Creek over an existing roadway culvert. The floodplain at that location is roughly 40 feet wide and apparently contained within the culvert. The proposed underground route shown in Figure B-15d crosses Potrero Creek in two locations, and crosses two additional minor drainageways. No floodplain information is available for these crossings. This route is over the Upper Santa Ana San Timoteo Groundwater Subbasin.

The first 690 feet of the proposed underground route shown in Figure B-15d, associated with the Banning Substation, between the existing Devers-Valley No. 2 500 kV structure M21 T3 and an existing distribution pole on Coyote Trail approximately 3,200 feet west of Old Idyllwild Road, is within the designated floodway of Smith Creek. Portions of the proposed overhead route are also within the floodway. The floodway, designated by FEMA as an area to be reserved for the flow of water in a 100-year storm event, is approximately 900 feet wide at this location. This route is over the Upper Santa Ana San Timoteo Groundwater Subbasin.

The proposed underground route shown in Figure B-15e, associated with the Devers Substation, has no hydrologic features except for local flow. This route is over the Coachella Valley Mission Creek Groundwater Basin.

D.19.1.3 Environmental Setting for Connected Actions

This section describes the environmental setting for surface water and groundwater for each of the three areas that are analyzed for connected actions related to the Proposed Project.

Desert Center Area. The Desert Center area is in eastern Riverside County and includes the Palen Valley and the western portion of the Chuckwalla Valley. The Chuckwalla Valley basin generally trends northwest to southeast and is surrounded by relatively impervious bedrock mountain exposures. Climate in the area is characterized by high aridity and low precipitation, with hot summer months and cool, dry winters. Average annual precipitation in the area (based on the gauging stations at Blythe Airport and Eagle Mountain) is 3.6 to 3.7 inches. Most moisture from precipitation is lost through evaporation and evapotranspiration.

The Desert Center area is located in the Colorado River HR, and is generally within the Palen HA subdivision of the Chuckwalla HU (the easternmost portion of the area is within the Ford HA).

Surface water resources in the area generally take the form of ephemeral desert washes with no water during most of the year. Numerous washes traverse the alluvial plains downstream of source areas, including the Eagle and Palen Mountains. There are no perennial streams in study area. Palen Dry Lake, a shallow playa where water gathers after a rain event but evaporates quickly, is located in the eastern portion of the area. There are no FEMA-mapped 100-year floodplains in the area, although shallow to moderately deep sheet flow would occur following a major rainfall event. The area does not contain any CWA 303d-listed impaired waterbodies.

The Desert Center area is underlain by the Chuckwalla Valley Groundwater Basin. California Groundwater Bulletin 118 estimated the total storage capacity of the basin at 9,100,000 acre-feet (DWR, 2003). Sulfate, chloride, fluoride, and TDS concentrations are high for domestic use (DWR, 2003). High concentrations of boron and TDS, and high sodium percentage impair groundwater for irrigation use (DWR, 2003). In the valley north of Palen Lake, TDS content ranges from 2,960 to 4,370 mg/L. Depth to groundwater in 2013 was approximately 150 feet bgs (USGS, 2013). According to a recent report by the USGS, "water needs associated with proposed solar energy projects within the basin have generated concern about potential detrimental effects on local groundwater resources" (2013). Recent analysis suggests that the basin is not currently in an overdraft condition (BLM, 2013).

Blythe Area. The Blythe area is located in eastern Riverside County and includes unincorporated land in Riverside County, west of the City of Blythe. The area is located on the Palo Verde Mesa, which is bounded on the east by the Palo Verde Valley, on the southwest by the Mule Mountains, on the northwest by the McCoy Mountains, and on the north by the Little Maria and Big Maria Mountains. Climate in the area is arid, with hot, dry summers and cooler winters. Average annual precipitation in the area (based on a gaging station at Blythe airport) is approximately 4 inches. Most moisture from precipitation is lost through evaporation and evapotranspiration.

The Blythe Area is located in the Colorado River HR, generally within the Palo Verde HA subdivision of the Colorado HU. The westernmost portion of the study area is adjacent to the Ford HA.

With the exception of the Colorado River, which lies to the east of the area, surface water resources in the area generally take the form of ephemeral desert washes with no water during most of the year. Numerous washes traverse the alluvial plains downstream of source areas, including the Big Maria, Little Maria, McCoy, and Mule Mountains. There are no perennial streams in the area. The Colorado River and several perennial agricultural supply ditches are east of the area. There are no FEMA-mapped 100-year floodplains in the area, although shallow to moderately deep sheet flow would occur following a major rainfall event. The area does not contain any CWA 303d-listed impaired waterbodies. However, the Palo Verde Outfall Drain and Lagoon, which is impaired by DDT, pathogens, and toxaphene, lies to the south-east of the area.

The Blythe area is underlain by the Palo Verde Mesa Groundwater Basin. California Groundwater Bulletin 118 estimated the total storage capacity of the basin at 6,840,000 acre-feet (DWR, 2003). High concentrations of arsenic, selenium, fluoride, chloride, boron, sulfate, and TDS have been recorded in the basin (DWR, 2003). Depth to groundwater in the basin ranges from approximately 80 feet bgs to approximately 150 feet bgs (RCPD, 2014). The water budget for the basin remains uncertain, but recent analysis suggests that the basin is not currently in an overdraft condition (BLM, 2013).

D.19.2 Applicable Regulations, Plans, and Standards

This section describes regulations, plans, and standards relevant to hydrology and water resources.

D.19.2.1 Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. 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). NPDES permitting authority is administered by the California State Water Resources Control Board (SWRCB) and its' nine Regional Water Quality Control Boards (RWQCB). The SCE West of Devers Upgrade Project is within areas administered by the Santa Ana and Colorado River Regional Water Quality Control Boards.

The SCE West of Devers Upgrade Project would disturb more than 1 acre of ground, placing the project under the NPDES and the California General Permit for Discharges of Storm Water Associated with Construction Activity (General Construction Permit). The NPDES Construction General Permit, administered by the Federal Environmental Protection Agency on Tribal Lands (Federal General Permit for Storm Water Discharges Associated with Construction Activities on Tribal Land), and by the California State Water Resources Control Board elsewhere on the West of Devers Project, requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMPs) the discharger would use to protect stormwater runoff. The SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a waterbody listed on the 303(d) list for sediment.

The General Permit requires that the SWPPP include a description of post-construction BMPs, and a maintenance schedule. An effective storm water management strategy must address the full suite of storm events including water quality, channel protection, overbank flood protection, and extreme flood protection. Overbank flood protection and extreme flood protection events are traditionally dealt with in local drainage and flood protection ordinances. However, measures in the General Permit to address water quality and channel protection also reduce overbank and extreme flooding impacts.

Section 401 of the CWA requires that any activity, including river or stream crossings during road, pipeline, or transmission line construction, which may result in a discharge into waters of the U.S. be certified by the RWQCB. This certification ensures that the proposed activity does not violate State and/or federal water quality standards. The SCE West of Devers Upgrade Project is expected to result in discharges to waters of the U.S., and would require Section 401 certification.

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (ACOE) to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. Discharges to waters of the U.S. must comply with Section 404 (b)(1) guidelines, meaning impacts must be avoided where possible, and minimized and mitigated where avoidance is not possible. The PEA includes a drainage assessment that makes a preliminary assessment of waters potentially affected by the project that may be jurisdictional under Section 404, but no final determination has been made at this time.

Section 303(d) of the Clean Water Act requires states to establish Total Maximum Daily Load (TMDL) programs for streams, lakes and coastal waters that do not meet certain water quality standards. This program is described further under Section D.19.2.2 (State) below.

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of regulatory floodplains and to local management of floodplain areas according to guidelines which include prohibiting or restricting development in flood hazard zones. Some of the structures proposed by the SCE West of Devers Upgrade Project would be located in designated flood hazard zones and would be subject to review by local floodplain management authorities.

D.19.2.2 State

California Streambed Alteration Agreement

Sections 1600–1616 of the California Fish and Game Code requires that any public utility (or other entity) that proposes an activity that would substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or, deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, must notify the California Department of Fish and Wildlife (CDFW). If the CDFW determines the alteration may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement would be prepared. The Agreement includes conditions necessary to protect those resources. The Agreement applies to any stream including ephemeral streams and desert washes.

The project would cause transmission structures and roads to be constructed in watercourses determined by the State of California to be habitat for fish and wildlife, and notification under Section 1600 would be required.

California Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for the project area are contained in the Water Quality Control Plan for the Santa Ana River Basin (CRWQCB, 2014) and the Water Quality Control Plan Colorado River Basin – Region 7 (CRWQCB, 2014). Constraints in the water quality control plans relative to the Proposed Project relate primarily to the avoidance of altering the sediment discharge rate of surface waters, and the avoidance of introducing toxic pollutants to the water resource. A primary focus of water quality control plans is to protect designated beneficial uses of waters. In addition, anyone proposing to discharge waste that could affect the quality of the waters of the state must make a report of the waste discharge to the Regional Water Quality Control Board or State Water Resources Control Board as appropriate, in compliance with Porter-Cologne.

TMDL Program

The California TMDL Program evaluates the condition of surface waters and sets limits on the amount of pollution that the water can be exposed to without adversely affecting the beneficial uses of those waters. The RWQCBs identify waters that are not attaining standards, and develop total maximum daily loads to account for all sources of the pollutants that caused the water to no attain standards. TMDL levels are established to achieve the applicable water quality standards. When the TMDL is established as a standard, a program must be designed to implement the TMDL. TMDLs developed by RWQCBs are added to the Water Quality Control Plan (Basin Plan) as amendments and include implementation provisions.

D.19.2.3 Local

Local Floodplain Regulations

Most counties and cities have floodplain and drainage regulations that regulate floodplain development. These regulations generally prohibit floodplain development that would result in flooding of the development itself, and prohibit floodplain development that would result in adverse flooding impacts on other property. For instance, floodplain encroachments that raise water levels on other property are generally prohibited, as are diversions and concentrations of flow. The Proposed Project would cross designated floodplains that are under the jurisdiction of Riverside County, the City of Banning, the City of Beaumont, and the City of Redlands.

D.19.3 Environmental Impacts of the Proposed Project

This section describes environmental impacts of the Proposed Project relevant to hydrology and water resources.

D.19.3.1 Approach to Impact Assessment

The impact analysis is based on an assessment of baseline conditions relevant to the site climate, topography, watersheds and surface waters, groundwater, floodplains, and surface water use, described in Section D.19.1. These baseline conditions were evaluated based on their potential to be affected by construction activities as well as operation and maintenance activities related to the Proposed Project and alternatives. Potential impacts were then identified based on the predicted interaction between construction, operation, and maintenance activities with the affected environment.

Impacts are described in terms of location, context and intensity, and identified as being either short- or long-term, or direct and indirect in nature. Beneficial as well as adverse impacts are identified, with a discussion of the effect and risk to water quality and public health and safety, and potential violation of environmental laws. Mitigation measures are developed to avoid or minimize impacts.

D.19.3.1.1 Applicant Proposed Measures

Table D.19-2 presents the Applicant Proposed Measures (APMs) that relate to hydrology and water resources. APM BIO-1 has been superseded by Mitigation Measures VEG-1d (Restore or revegetate temporary disturbance areas) and APMs HYDRO-2 and HYDRO-3 have been superseded by Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits).

Table D-19-2. Applicant Proposed Measures – Water Resources and Hydrology

APM	Description
Biology	
APM BIO-1	**Revegetation Plan.** Prior to starting construction, a draft revegetation plan would be prepared to guide the revegetation of those areas subject to temporary project impacts during construction and that are not included within either the WR-MSHCP or CV-MSHCP (e.g., land areas within the Morongo Reservation or San Bernardino County), and where dominant land cover consists of native vegetation. The objective of revegetation would be to re-establish vegetation back to pre-construction conditions (e.g., by maintaining roughly equivalent or comparable native to non-native dominance patterns) with consideration of adjacent community composition. Areas dominated primarily by non-native vegetation and that are temporarily disturbed by construction activities may also be revegetated; however, the primary objective for those areas would be to stabilize soils to minimize erosion potential in accordance with any applicable SWPPP requirements. Prior to completing construction activities, the revegetation plan would be finalized to address site-specific conditions, methodology and technique, implementation schedule, monitoring and maintenance, and success criteria. The revegetation plan would also direct revegetation of temporarily impacted native-dominated vegetation areas located in the WR-MSHCP and the CV-MSHCP plan areas consistent with MSHCP standards and pursuant to any agreements negotiated between SCE and the MSHCP management entities (e.g., RCA and CVCC) regarding SCE's obligations as a PSE receiving coverage for impacts to various resources. If SCE does not gain PSE status under either MSHCP, the draft revegetation plan to re-establish native-dominated vegetation back to pre-construction conditions (as noted above) would include native dominated areas within

Table D-19-2. Applicant Proposed Measures – Water Resources and Hydrology

APM	Description
	MSHCP areas also. The draft revegetation plan would be submitted to the CPUC, BLM, and applicable wildlife agencies for approval after completion of final engineering and prior to the start of construction. The Revegetation Plan will include the following elements: (a) A statement of revegetation goals for different areas within the project (e.g., to mitigate project impacts to specific resources) based on the administrative land jurisdiction particular areas fall in and also based on the different vegetation types and the constituent elements therein. In particular, revegetation objectives for areas supporting native vegetation may differ substantially from the objectives for revegetation in other areas. Revegetation objectives will be specified for different habitat and vegetation types and for the following administrative areas: 1) San Bernardino County, including specific reference to goals for revegetation within USFWS-designated Critical Habitat for California gnatcatcher and areas deemed occupied by Stephens' kangaroo rat; 2) WRC MSHCP areas, including Public/Quasi-Public conservation areas and Additional Reserve Lands; 3) CVMSHCP areas; and 4) areas to be re-vegetated on land within the Morongo Reservation. Examples of likely goals may include preventing or minimizing further site degradation; stabilizing soils; promoting passive vegetation recovery over time; replacing degraded natural vegetation and habitat value with equivalent vegetation cover and composition as compared to pre-construction conditions; and minimizing soil erosion, dust generation, and weed invasions. (b) Quantitative success criteria. Because restoration goals will differ according to location, success criteria shall be tailored appropriately to areas in different administrative jurisdictions (please see above) and will also be defined specifically for areas containing habitat for listed species and other special-status species for which habitat value is being replaced along the route. (c) Implementation. The Plan will describe SCE's proposed implementation measures, including: (a) pre-construction characterization of specific areas subject to temporary construction impacts; (b) soil preparation measures, including locations of recontouring, decompacting, soil amendments, imprinting, or other treatments; (c) details for top soil salvage and storage, as applicable; (d) plant material collection and acquisition guidelines, including guidelines for obtaining plants or seed from vendors; (e) scheduling and methods for planting or seeding; (f) proposed irrigation methods. (d) Maintenance. The Plan will include scheduling and methods for proposed maintenance activities such as weeding, trash removal, etc. (e) Monitoring and Reporting. The Restoration Plan will include a detailed monitoring and reporting program, commensurate with the goals and success criteria for each revegetation site. The monitoring and reporting program will be designed to evaluate progress toward success criteria at appropriate milestones, provide an objective determination whether each site meets success criteria at the end of the monitoring period, and report this information to the relevant agencies. (f) Contingency. The Plan will include contingency measures for implementation if revegetation efforts make insufficient progress toward success criteria at specified milestones
Hydrology	
APM HYDRO-1	Installation of drainage improvements would be designed to maintain the existing flow patterns as practicable.
APM HYDRO-2	Soil disturbance at structures and access roads would be minimized and designed to prevent long-term erosion through revegetation or construction of permanent erosion control structures.
APM HYDRO-3	Erosion control and hazardous material plans will be incorporated into the construction bidding specifications to ensure compliance.

D.19.3.2 Impact Criteria

NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). Using the following criteria for the purposes of analysis, the project or an alternative would impact hydrology and water resources if it would:

- Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

  The project overlies several groundwater basins and would involve construction excavation.

- Place within a watercourse or flood hazard area structures which would impede or redirect flood flows, or otherwise alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in erosion, siltation, or mudflow.

  The project crosses a number of watercourses, and some of the excavation would be in or near watercourses. There would be construction-related ground disturbance.

- Increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems, divert or obstruct flow in a manner that would induce or exacerbate flooding, or otherwise contribute to flood-related damage, on- or off-site.

  This impact relates to flooding and flood damage. Portions of the project would be in floodplain areas.

- Violate any water quality standard or waste discharge requirement, or otherwise degrade water quality, including through providing substantial additional sources of polluted runoff.

  Portions of the project would be in or cross streamflow areas.

D.19.3.3 Impacts and Mitigation Measures

Impact WR-1: The project would deplete groundwater supplies or interfere with groundwater recharge

Construction Water Usage. As explained in Section B.3.1.4, SCE has estimated it would use up to a maximum of 250 acre-feet of water per year for construction purposes. Over the nearly 50-mile right-of-way, this water could be obtained from any of 14 possible local water districts (see Table B-8 in Section B). These local water districts use a combination of surface water and groundwater for water supply.

SCE would not extract groundwater itself to use for dust control; this water would be provided by local or regional water purveyors. Mitigation Measure UPS-1a (Use non-potable water for construction purposes; see Section D.17) would require SCE to use non-potable water for dust control and soil compaction whenever feasible. If non-potable water is not available, SCE's construction water demand has the potential to affect local water supplies. As shown in Table B-8 in Section B, the total water supply from the 14 identified water districts exceeded total water use within those districts by 22,597 acre-feet in 2010 (the most recent year with complete data). Water supply and water use data was not available for all 14 of the identified districts. However, based on the best available and most current data, water supply exceeds water use in the area by almost an order of magnitude more than SCE's proposed construction water demand. Therefore, even if non-potable water is not available for dust suppression and soil compaction, the potential adverse effect on local water supplies due to Proposed Project construction water use would be very minor.

Dewatering. Construction excavation or augering would be required, up to 60 feet in depth, to construct structures and other underground facilities. Should groundwater be found in these excavations, dewatering may be necessary. This would be a direct impact to the groundwater resource.

Most of the groundwater aquifers underlying the project route are deeper than 60 feet and are unlikely to be affected by dewatering activities. Two possible exceptions are the Coachella Valley San Gorgonio Pass Groundwater Basin, which has reported water levels within 47 feet of the surface, and the Upper Santa Ana Valley Rialto-Colton Subbasin, which has groundwater within 56 feet of the ground surface. It is not known whether these depths are at the locations of the Proposed Project. There is a possibility that some dewatering could occur in the San Gorgonio Pass and Upper Santa Ana Valley Rialto-Colton groundwater basins during construction of structures, particularly those structures within the alluvial floodplains of the watercourses described in Table D.19-1.

The impacts to the San Gorgonio Pass Groundwater Basin and Upper Santa Ana Valley Rialto-Colton Groundwater Basin are expected to be minimal, because the maximum excavation or augering depth extends only a short distance into the highest reported level of the groundwater. Not all excavations would require dewatering. Also, these impacts would be temporary (occurring during construction only), and the amount of water to be extracted would be small in comparison to the volume of water in the groundwater basin. The groundwater supplies would not be depleted.

It is possible that additional shallow subsurface water could be encountered at other locations during construction, possibly requiring dewatering. Although there is a potential for local shallow groundwater to occur anywhere along the route, it is most likely to occur where structures are proposed at or near the watercourse crossings listed in Table D.19-1, especially in the western portion of the route where rainfall is higher. Temporary dewatering of local groundwater during construction of transmission structures and underground portions of the route would not affect the major aquifers that are used for water supply.

Mitigation Measure for Impact WR-1: The project would deplete groundwater supplies or interfere with groundwater recharge

UPS-1a Use non-potable water for construction. (Full text included in Section D.17)

Impact WR-2: The project would cause erosion and siltation

Project construction would require excavation and grading for access roads and new transmission structures, trenching for underground facilities, and excavation and grading for the removal of existing structures. Disturbance of soil during construction could result in erosion of disturbed areas during rainfall events, with eroded soil potentially transported by runoff to downstream watercourses, streets or other areas. This would be an indirect impact requiring the action of rainfall and surface runoff to occur.

Land disturbance caused by project construction activities, including existing unpaved access roads, could produce erosion and surface runoff. The highest potential for this impact to occur would be on new access roads and pads to be constructed for the proposed 220 kV structures, and in hilly areas with steep terrain such as the Timoteo Badlands area of Segment 3. San Timoteo Creek and local tributaries in Segment 3 would be potentially affected by sediment eroded from project work areas.

This impact could also occur during project operation (after construction is complete). Lands disturbed by grading and excavation could continue to erode during rainfall events well after construction has ended. In most cases the risk to water quality would be minimal, though there would be some risk to public safety (e.g., if project-induced siltation were to obstruct traffic lanes in a street or highway).

SCE has committed to implementation of three APMs that would reduce erosion: APM HYDRO-2, APM HYDRO-3, and APM BIO-1. While these APMs would reduce many impacts to water quality and would address short-term and long-term soil erosion induced by construction, Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits; full text presented below) adds detail and is required to ensure that erosion is controlled. Mitigation Measure WR-2a supersedes APMs HYDRO-2 and HYDRO-3.

As described in Section B.3.1.2 (Section B, Project Description), SCE would develop and adhere to SWPPPs in conformance with the California General Permit for Discharges of Storm Water Associated with Construction Activities and the Federal General Permit for Storm Water Discharges Associated with Construction Activity on Tribal Land. The SWPPP would be required to implement best management practices to control surface erosion. Multiple SWPPPs are expected to be required for project construction. With implementation of Mitigation Measure WR-2a, APMs, and existing regulations, surface erosion impacts are expected to be minimal.

Drainage patterns could be disturbed through grading, construction of structure pads, and placement of structures and other above-ground structures in watercourses. Due to the nature of this project, with small-footprint structures spread over a large area, any drainage pattern disturbance would be local. Local disturbances, for instance a structure constructed in a flow path could cause local scour and erosion that could extend to adjacent property, and result in deposition of eroded material into stream beds downstream of the area of disturbance. The effect could be temporary during construction, or long-term, as would be the case with a structure in a flow path, with similar risks to public safety as described for this impact above. This impact could occur anywhere along the project route where construction would be in flow paths. The most likely areas of effect are in the vicinity of the watercourses listed in Table D.19-1.

Access roads would be constructed in watercourses, and some structures may be located directly within major watercourses listed in Table D.19-1. APM HYDRO-1 requires maintaining the existing flow pattern where possible. Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) is recommended. Compliance with Sections 404 and 401 of the Clean Water Act, and with Sections 1600–1616 of the California Fish and Game Code, would further reduce impacts to watercourses, and require mitigation. With mitigation, APMs, and compliance with existing regulations, erosion impacts related to disturbance of drainage patterns are expected to be minimal.

Mitigation Measure for Impact WR-2: The project would cause erosion and siltation

WR-2a **Implement an Erosion Control Plan and demonstrate compliance with water quality permits.** SCE shall develop and submit an Erosion Control Plan to the CPUC and BLM for approval at least 60 days prior to construction. The Erosion Control Plan may be part of the Stormwater Pollution Prevention Plan, and kept onsite and readily available on request.

Soil disturbance at structures and access roads is to be minimized and designed to prevent long-term erosion. The Erosion Control Plan shall include:

- The location of all soil-disturbing activities, including but not limited to new and/or improved access and spur roads.
- The location of all streams and drainage structures that would be directly affected by soil-disturbing activities (such as stream crossings or public storm drains by the right-of-way and access roads).
- BMPs to protect drainage structures, such as public storm drains, downstream of soil disturbance activities.
- Design features to be implemented to minimize erosion during construction and during operation (if the project feature is to remain permanent after construction).
- If soil cement is proposed, the specific locations must be defined in the Plan, and evidence of approval by appropriate jurisdiction shall be submitted to the CPUC and BLM prior to its use.

- If design features include the use of retaining structures and/or walls, the design of the features shall be consistent with Mitigation Measure VR-3a (Reduce color contrast of retaining walls and land scars).
- The location and type of BMPs that would be installed to prevent off-site sedimentation and to protect aquatic resources.
- Specifications for the implementation and maintenance of erosion control measures and a description of the erosion control practices, including appropriate design and installation details.
- Proposed schedule for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, if required. Erosion control/SWPPP inspection reports shall be provided to the CPUC EM.

Locations requiring erosion control/SWPPP corrective actions/repairs shall be tracked, including dates of completion, and documented during inspections. Inspections and monitoring shall be performed in compliance with the Federal and California Construction General Permits. The inspection reports shall be maintained and kept in their respective SWPPP, kept on site as required by the Federal and State Construction General Permits, and made available to the RWQCB, CPUC, BLM, counties, local municipalities, and tribal governments, on request. Additionally, an Annual Report shall be filed for each reporting period in compliance with Federal and California Construction General Permit reporting requirements.

SCE shall submit to the CPUC and BLM Grading Plans that define the locations of the specific features listed above.

SCE shall submit to the CPUC and BLM evidence of possession of applicable required permits for the representative land disturbance prior to engaging in soil-disturbing construction/ demolition activities. Such permits may include, but are not limited to, a CWA Section 402 NPDES California General Permit for Storm Water Discharges Associated with Construction Activities (General Permit) from the applicable Regional Water Quality Control Board(s) (RWQCBs), and the Federal General Permit for Storm Water Discharges Associated with Construction Activities on Tribal Land.

Prior to ground disturbance in stream channels or other waters jurisdictional to the State of California or the Federal Government, SCE shall obtain a Streambed Alteration Agreement from the California Department of Fish and Wildlife, a Section 404 permit from the USACE, and a CWA Section 401 certification from the SWRCB.

Impact WR-3: The project would cause flood damage

The rate or amount of surface runoff could be increased as a result of changes to the permeability of the ground surface through the construction of new impervious areas, or by removal of vegetation and alteration of natural soil surface characteristics by constructing and compacting new access roads. New impervious surfaces resulting from the project would be small and limited primarily to new structures and their foundations, resulting in negligible increase in runoff. For example, structure footings would be approximately 38 square feet in area. It would take 50 structures to have an equivalent impervious area as one medium-sized house.

Some new access roads in mountainous areas may be paved. Most disturbances that could result in changes in rainfall/runoff characteristics would consist of unpaved access roads, spur roads, temporary construction roads, structure pads, and temporary staging areas. Areas with the largest potential for increased runoff would be in areas currently not disturbed, which consist of most of Segments 2, 3, 4, 5 and 6.

Total disturbance during construction is estimated at less than 5,000 acres, averaging about 104 acres per mile of route. Perceptible local increases in runoff rate and amount could occur as a result of this disturbance. However, the total area is small compared to the size of watersheds capable of producing most flooding. The San Timoteo Creek watershed, in which roughly half of the disturbance would occur, has an area of 125 square miles at Loma Linda, meaning total project-related ground disturbance in that watershed would be about 2 percent of the total area of the watershed. This disturbance is expected to result in minimal increase in runoff and little risk to water quality.

Most of the ground disturbance for roads would be temporary and for the duration of construction only. Of the nearly 5,000 acres of total disturbance, about 4,200 would be restored to natural condition, leaving about 500 acres permanent disturbance (about 11.4 acres per mile) that would be converted from natural ground to mostly unpaved access roads and pads. Minor local increases in runoff rate and volume are probable. In terms of the overall watersheds involved, this disturbance, and associated long-term increases in runoff rate and volume, is minimal.

APM HYDRO-1 requires maintaining the existing flow pattern where possible, which would minimize the potential for diverting or obstructing flow in a manner that would induce or exacerbate flooding, as would compliance with Clean Water Act Section 404. All of the proposed new above-ground structures are relatively small and widely distributed, such that diversions of flood flows are unlikely with the exception of local minor drainage. None of the proposed structures are located in active channels, but several (as shown in Tables D.19-1 and D.19-3) are within potentially active braided areas of alluvial fans which could become active channels.

Table D.19-3 defines the locations where new structures would be installed within known floodplains. In the event of large floods the structures would cause local flow turbulence, but damaging flow diversions due to the presence of the structure are unlikely because of the small tower footprint relative to the width of the floodplain, and the placement of most structures outside the active channel where the potential for damaging diversions is greatest. Those structures located in braided alluvial fans will be in areas where flow paths are naturally subject to variation and are of much greater extent than the footprint of the towers.

Table D.19-3. New Transmission Towers in Mapped FEMA 100-Year Floodplains.

Transmission Line	Tower Number	Watercourse	Comments
San Bernardino–Redlands-Tennessee 66 kV	70, 71, 72, 73, 74, 84	Mission Zanja	No structures in active channel
San Bernardino–Redlands-Tennessee 66 kV	90, 91, 92, 93	Morey Arroyo	No structures in active channel
San Bernardino–Timoteo-Redlands 66 kV	43, 44	Mission Zanja	No structures in active channel
Devers-Vista No. 1 220 kV	5N48, 5S48, 5N48, 5S48,	San Gorgonio River	No structures in active channel
Devers-Vista No. 1 220 kV	5N35, 5S35, 5N36, 5S36, 5N37, 5S37, 5N38, 5S38	San Gorgonio River	No structures in active channel. All structures within braided alluvial fan.
Devers-Vista No. 1 220 kV	5N19, 5S19	Millard Canyon Creek	No structures in active channel.
Devers-Vista No. 1 220 kV	6S41, 6S42, 6N42, 6S43, 6N43, 6S44, 6N44, 6S45, 6N45	Stubble Creek	No structures in active channel. All structures within braided alluvial fan.

Listed in this table are structures known to be within mapped 100-year floodplains. Many areas prone to flooding are not mapped. Towers that may be within unmapped floodplains are not listed.

Flood-related damage to project structures is possible in the event that lateral erosion of watercourse banks or vertical scour of the stream bed during a large flood reaches and destabilizes a structure or other underground project feature. Transmission structures could be destabilized if footings are not designed for anticipated stream scour, which may not be considered in the design process for structures not currently in active channels. Direct effects to public safety could occur through scour-related destruction of or damage to the transmission structure, resulting in tower collapse and interruption of electric service. At least four structures (5N34, 5S34, 5N54, 5S35) would be located within 100 feet of the active channel of the San Gorgonio River. The active channel at this point is approximately 450 feet wide. The channel banks in this general area are known to have moved by erosion up to 130 feet in a flood or floods that occurred between 2004 and 2005, and it is possible these four structures could be captured by the channel during future large floods. Other structures within the active braided area of the alluvial fans emanating from the San Bernardino Mountains could also be at risk (see Tables D.19-1 and D.19-2).

As described in Section D.19.1.2.10 (Telecommunications Facilities), a portion of a new underground telecommunications line would be within the designated floodway of Smith Creek. The proposed line would not obstruct flow, and would therefore be compatible with floodway uses, but the line could be uncovered and damaged by vertical scour during a large flood, resulting in possible communication outages.

Onsite damages related to channel erosion and vertical scour during a flood could be prevented by design of footings and burial depth to account for erosion and scour. The final design analysis has not been completed, and it is not known at this time if footings and burial depths would take erosion and scour into account. Mitigation Measure WR-3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) is recommended in order to reduce the potential for damage and interruption of power and communication services due to erosion and scour.

Mitigation Measure for Impact WR-3: The project would cause flood damage

WR-3a **Implement flood, erosion, and scour protection for aboveground and belowground improvements.** SCE shall make a determination during final project design phase as to the lateral erosion and 100-year scour potential for watercourses near proposed structures and other above-ground features, as well as new underground conduits. This determination shall be made by a registered professional engineer with expertise in river mechanics. If the determination identifies specific structures or underground conduits that may be subject to scour or lateral movement of a stream channel, these structures shall be protected against 100-year scour and/or lateral erosion through modifications of the foundation design, or otherwise in a manner determined to be appropriate by the river mechanics engineer.

SCE shall provide the determination of lateral erosion and scour potential, and documentation of corrective actions and the engineering basis thereof, to the CPUC and BLM prior to the start of construction (as defined in Mitigation Measure EM-1a (Prepare monitoring plan).

SCE shall evaluate and conform to NPDES MS4 Phase I and II requirements for post-construction BMPs and, in consultation with San Bernardino and Riverside Counties and applicable local jurisdictions and agencies, prepare or conform to existing Water Quality Management Plans where determined necessary.

Impact WR-4: The project would degrade water quality, or violate a water quality standard or waste discharge requirement

Construction of the project would require excavation and grading for roads, trenches and structures, and for removal of existing structures. Disturbance of soil during construction could result in soil erosion and lowered water quality through increased turbidity and sediment deposition into local streams. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for suspended solids, total dissolved solids, sediment and turbidity. This impact would apply to all watercourses along the route (see list of watercourses in Table D.19-1).

Accidental spills or disposal of harmful materials used during construction could wash into and pollute surface waters or groundwater. Materials that could contaminate the construction area or spill or leak include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for toxicity and chemical constituents. This impact could affect all watercourses along the route.

The dry nature of most of the surface streams is such that should material spills occur during construction, these could easily be cleaned up prior to water being contaminated (because water is not generally flowing). Groundwater basins potentially affected generally have groundwater deeper than 60 feet, which in nearly all cases would be below the maximum depth of excavation (see the description of Impact WR-1). With shallow excavation and deeper groundwater, there is little likelihood that groundwater could be affected directly during construction.

Mitigation Measures WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) and WR 3a (Implement flood, erosion, and scour protection for aboveground and below-ground improvements) would require development of and adherence to erosion-control and flood protection plans during construction, conformance to NPDES MS4 Phase I and II requirements for post-construction BMPs, and adherence to applicable Water Quality Management Plans. Development and adherence to the SWPPP in conformance with applicable California or Federal General Permits for Discharges of Storm Water Associated with Construction Activity would require best management practices to prevent and control erosion and siltation during construction, prevent, contain and mitigate accidental spills during construction, require post-construction BMPs, and address treatment, if required, and disposal of, dewatered groundwater to prevent violation of water quality objectives or damaging beneficial uses. Compliance with Sections 401 and 404 of the Clean Water Act would also minimize this impact. Mitigation Measure HH-2a (Prepare a hazardous materials and waste management plan), described in Section D.10 Hazards and Hazardous Materials, would further ensure against potential surface and groundwater contamination.

D.19.3.4 Impacts of Connected Actions

Impact WR-1: The project would deplete groundwater supplies or interfere with groundwater recharge

Desert Center Area. Connected solar projects in this the Desert Center area would include development of a 500 MW solar trough project and 450 MW of solar PV on a total of 6,600 acres. The area is underlain by the Chuckwalla Valley Groundwater Basin. Total storage capacity of the basin is approximately 9,100,000 acre-feet (DWR, 2003). Depth to groundwater in 2013 was approximately 150 feet bgs (USGS, 2013). Recent analysis suggests that the basin is not currently in an overdraft condition (BLM, 2013).

The Revised Presiding Member's Proposed Decision for the Palen Solar Power Project concluded that the Reconfigured Alternative #2 would require a total of approximately 5,750 af of water for construction, and approximately 300 afy of water during operation of the project (CEC, 2010). Other solar projects in this area include the DHSP (described above) and an additional 300 MW of solar PV that would be developed on approximately 2,400 acres. Excluding DHSP, these additional connected action projects would be composed of a 250 MW solar PV project and a 50 MW solar PV project, which would be constructed on 2,000 acres and 400 acres, respectively. The DHSP would require a total of approximately 800 to 1,000 af of water for construction and approximately 26 to 39 afy of water for operations. Using this as a gage, the 250 MW solar PV project would be approximately two-thirds larger than the DHSP in terms of MW and acres, and it is assumed that it would require two-thirds more water for construction and operation. Total construction water demand for the 250 MW solar PV project is assumed to be 1,328 to 1,660 af. Operational water demand is assumed to be approximately 43 to 65 afy. The 50 MW solar PV project would be one-third the size of the DHSP in terms of MW and acres, and it is assumed that it would require two-thirds less water for construction and operation. Total construction water demand for the 50 MW solar PV project is assumed to be 264 to 330 af. Operational water demand is assumed to be approximately 9 to 13 afy.

The total combined construction water demand for the connected solar projects in this area is estimated at 8,142 to 8,740 af. Total combined operational water demand is estimated at 378 to 417 afy. The storage capacity for the Chuckwalla Valley Groundwater Basin is reported as approximately 9,100,000 af (DWR, 2003). The current amount of water in storage is unknown, but recent analysis suggests that the basin is not currently in an overdraft condition (BLM, 2013). In September of 2013, the Final Staff Assessment for the Palen Solar Electric Generating System concluded that the Chuckwalla Valley Groundwater Basin had a positive annual water balance of 2,608 af (CEC, 2013). Although the total construction water demand of up to 8,740 af and the total operational water demand of up to 417 afy represent a very small percentage of the total storage capacity of the basin (0.04% and 0.002%, respectively), the total construction water demand for all of the solar projects in this area would exceed the annual water balance for the Chuckwalla Valley Groundwater Basin and would lead to overdraft conditions. However, these construction-related adverse effects would be temporary, and the total combined operational water demand for all of the solar projects in this area would not exceed the positive annual water balance for the basin or result in continued overdraft conditions.

Mitigation would be required to prevent a substantial adverse effect to groundwater levels. Implementation of mitigation, including but not limited to: measures to monitor drawdown and groundwater overdraft conditions; the provision of alternative sources of water from outside of the basin; and, drought water management and water conservation programs would reduce the severity of this adverse effect. If groundwater monitoring reveals that construction of the solar projects in this area would lead to overdraft conditions in the basin, then measures including water conservation programs or alternative sources of water supply would be required to protect groundwater resources.

Blythe Area. The connected solar projects in this the Blythe area would involve development of 524 MW of solar PV projects on about 4,200 acres. Groundwater in this area is described in Section D.19.1.3. The study area is underlain by the Palo Verde Mesa Groundwater Basin. The total storage capacity of the basin is estimated at approximately 6,840,000 acre-feet (DWR, 2003). High concentrations of arsenic, selenium, fluoride, chloride, boron, sulfate, and TDS have been recorded in the basin (DWR, 2003). Depth to groundwater in the basin ranges from approximately 80 feet bgs to approximately 150 feet bgs (RCPD, 2014). The water budget for the basin remains uncertain, but recent analysis suggests that the basin is not currently in an overdraft condition (BLM, 2013).

The environmental analysis for the Desert Harvest Solar Project (DHSP) concluded that total construction water demand would be approximately 800 to 1,000 acre-feet. The DHSP is in a similar climatic and topographic area as the Blythe area and would involve development of 150 MW of solar PV on approximately 1,200 acres. The connected projects in the Blythe area would include three solar PV projects that would produce a combined 524 MW on a total of approximately 4,200 acres. Two of the projects would be 150 MW solar PV developments on 1,200 acres each. The third project would be 224 MW developed on approximately 1,800 acres. The combined connected actions in this the Blythe area would be approximately 3.5 times larger than the DHSP in terms of MW and acres. These connected action projects are therefore estimated to require a combined total of approximately 2,800 to 3,500 acre-feet of water for construction. Operational water demand for the DHSP would be approximately 26 to 39 afy, mainly for panel washing. Total operational water demand for the combined connected action projects in this study area would be 3.5 times greater, or approximately 91 to 136.5 afy.

The total storage capacity of the Palo Verde Mesa Groundwater Basin is estimated at approximately 6,840,000 acre-feet (DWR, 2003). The current amount of water in storage is unknown, but recent analysis suggests that the basin is not currently in an overdraft condition (BLM, 2013). Although the total construction water demand of up to 3,500 af and the total operational water demand of up to 136.5 afy are large amounts of water, they represent a very small percentage of the total storage capacity of the basin (0.05% and 0.002%, respectively). Because the basin is not currently understood to be in an overdraft condition, and because both the total construction water demand and total operational water demand for the connected action projects in this area represent very small percentages of the total storage capacity of the basin, the construction and operational adverse effects on groundwater in this study area could be minimized with effective mitigation.

These adverse effects could be reduced through implementation of mitigation, including but not limited to: measures to monitor drawdown and groundwater overdraft conditions; the provision of alternative sources of water from outside of the basin; and, drought water management and water conservation programs.

Impact WR-2: The project would cause erosion and siltation

Common to All Areas. Construction of the connected action projects would require ground-disturbing activities (including vegetation clearance, excavation, and grading) for access roads, PV panel, gen-tie lines, and O&M buildings. The solar trough project in Desert Center also would substitute parabolic mirrors for PV panels. Disturbance of soil during construction could result in erosion of disturbed areas during rainfall events. The eroded soil potentially would be transported by runoff to downstream watercourses, streets or other areas. This would be an indirect adverse effect requiring the action of rainfall and surface runoff to occur.

Land disturbance caused by project construction activities for this connected action, including existing unpaved access roads, could produce erosion and surface runoff. The highest potential for this impact to occur would be for areas of recent ground disturbance that experience a sufficiently large amount of precipitation that results in runoff, including channel flow in the desert washes and sheet flow or shallow flooding. This impact could also occur during project operation (after construction is complete). Lands disturbed by grading and excavation could continue to erode during rainfall events well after construction has ended.

Average annual precipitation in three connected action areas is approximately 4 to 5 inches and most of that water is lost to evaporation and evapotranspiration. However, numerous ephemeral desert washes traverse the area. Drainage patterns could be disturbed through grading, construction of solar PV panel arrays and O&M buildings, and by placement of structures in watercourses. Disturbance and alteration of the existing drainage pattern could result in accelerated erosion and sedimentation. The connected action project in this area would be located on mostly flat ground and would experience runoff infrequently in response to large precipitation events. Drainage in the area takes the form of broad, ephemeral desert washes and sheet flow across the valley floor. Due to the broad, meandering nature of drainage in the area, it is not expected that the solar project here would substantially disturb or alter the existing drainage pattern.

This adverse effect related to increased erosion and sedimentation could be reduced through compliance with existing regulation and implementation of mitigation. Section 402 of the Clean Water Act requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which includes BMPs to prevent polluted stormwater from leaving the project site. Mitigation that would reduce this adverse effect includes the development and implementation of an erosion control plan, and the implementation of project design characteristics to maintain the existing drainage and flow pattern across the project site. With implementation of mitigation and compliance with existing regulations, this adverse effect would be minor.

Impact WR-3: The project would cause flood damage

Common to All Areas. Existing drainage patterns in all areas are characterized by ephemeral drainages which contain water only after precipitation events sufficient to produce runoff. Construction of the connected action projects would alter surface water drainage patterns through the implementation of infrastructure and components such as the PV arrays (or parabolic mirror arrays), O&M buildings, and access roads, and soil compaction required to install these features. Construction of the connected action projects would include both temporary and permanent disturbance to the sites. Temporary disturbance would result from trenching for electrical conduit as well as site preparation and leveling for construction staging areas, concrete batch plant(s), and temporary access roads. Permanent disturbance would result from construction of access roads, O&M facilities, and solar PV panel or parabolic mirror array foundations.

Alterations to drainage patterns during the construction of the connected action projects could result in flooding on- or off-site. Encroachment of a project structure into a stream channel or floodplain could result in flooding of or erosion damage to the encroaching structure, diversion of flows and increased flood risk for adjacent property, or increased erosion on adjacent property. Earthmoving activities would occur within or adjacent to on-site drainages only where permitted for road crossings, trenching, and restoration work. In addition, it is anticipated that some project features would be placed in areas subject to periodic overland flow or placed within broad, ephemeral washes.

The permanent aboveground features associated with the projects would be designed and engineered to withstand potential flooding and erosion hazards. Without the implementation of mitigation measures, construction of the projects would increase stormwater peak-flow rates and velocities both on site and off site. This adverse effect related to flood damage could be reduced through compliance with existing regulation and implementation of mitigation. Section 402 of the Clean Water Act requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which includes BMPs to prevent polluted stormwater from leaving the project site. Mitigation that would reduce this adverse effect includes the development and implementation of a project-specific erosion control plan, and the implementation of project design characteristics to maintain the existing drainage and flow pattern across a project site. With implementation of mitigation and compliance with existing regulations, this adverse effect would be minor.

Desert Center Area. Connected actions in this study area would include the development of a 500 MW solar trough project and 450 MW of solar PV on a total of 6,600 acres. The rate or amount of surface runoff could be increased as a result of changes to the permeability of the ground surface through the construction of new impervious areas, or by removal of vegetation and alteration of natural soil surface roughness characteristics by constructing and compacting new access roads. New impervious surfaces resulting from the connected action projects would be small and limited primarily to the foundations for the parabolic mirrors, solar PV panel arrays, and O&M facilities. There are no FEMA-mapped 100-year floodplains in the area, although shallow to moderately deep sheet flow would occur following a major rainfall event.

Blythe Area. Connected actions in this study area would include the development of 524 MW of solar PV projects on about 4,200 acres. The rate or amount of surface runoff could be increased as a result of changes to the permeability of the ground surface through the construction of new impervious areas, or by removal of vegetation and alteration of natural soil surface roughness characteristics. New impervious surfaces resulting from the connected action project would be small and limited primarily to solar PV panel arrays and their foundations. There are no FEMA-mapped 100-year floodplains in the area, although shallow to moderately deep sheet flow would occur following a major rainfall event.

Impact WR-4: The project would degrade water quality, or violate a water quality standard or waste discharge requirement

Common to All Areas. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for suspended solids, total dissolved solids, sediment and turbidity.

Accidental spills or disposal of hazardous materials used during construction could wash into and pollute surface waters or groundwater. Hazardous materials that could be released during construction of the connected action project include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for toxicity and chemical constituents.

The dry nature of most of the study area is such that should material spills occur during construction, these could easily be cleaned up prior to water being contaminated (because water is not generally flowing). Given the depth to groundwater in all of the areas, there is little likelihood that groundwater would be affected directly during construction.

This adverse effect related to water quality degradation could be reduced through compliance with existing regulation and implementation of mitigation. A required SWPPP includes BMPs to prevent polluted stormwater from leaving the project sites. Mitigation that would reduce this adverse effect includes: the development and implementation of erosion control plans; the implementation of project design characteristics to maintain the existing drainage and flow pattern across the project sites; and the development and implementation of a hazardous materials and waste management plan that would require BMPs to prevent, contain and clean-up accidental spills. With implementation of mitigation and compliance with existing regulations, this adverse effect would be minor.

Desert Center Area. Connected actions in this study area would include the development of a 500 MW solar trough and 450 MW of solar PV on a total of 6,600 acres. Construction of the connected action projects would require excavation and grading for O&M facilities, roads, trenches, the parabolic mirrors, and PV panel array foundations. Groundwater in the study area is encountered at average depth of approximately 150 feet bgs, which in nearly all cases would be below the maximum depth of excavation.

Blythe Area. Connected actions in this study area would include the development of 524 MW of solar PV projects on about 4,200 acres. Construction of the connected action projects would require excavation and grading for O&M facilities, roads, trenches, and PV panel array foundations. Groundwater in the study area is encountered at depths of approximately 80 to 150 feet bgs, which in nearly all cases would be below the maximum depth of excavation.

D.19.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.19.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Water resources and hydrology within the ROW are described by segment in Section D.19.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.19.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Four impacts related to water resources and hydrology were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative. This alterative overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.19.3.3, except where otherwise noted.

Impact WR-1: The project would deplete groundwater supplies or interfere with groundwater recharge

SCE has estimated it would use up to a maximum of 250 acre-feet of water per year for construction purposes. The Tower Relocation Alternative would have similar requirements. SCE would not extract groundwater itself to use for dust control; this water would be provided by local or regional water purveyors. If non-potable water is not available, SCE's construction water demand has the potential to affect local water supplies. Based on the best available and most current data, water supply exceeds water use in the area by almost an order of magnitude more than SCE's proposed construction water demand. Therefore, even if non-potable water is not available for dust suppression and soil compaction, the potential adverse effect on local water supplies due to Proposed Project construction water use would be very minor.

Should groundwater be found in excavations, dewatering may be necessary. Most of the groundwater aquifers underlying the project route are deeper than 60 feet and are unlikely to be affected by dewatering activities. Two possible exceptions are the Coachella Valley San Gorgonio Pass Groundwater Basin, which has reported water levels within 47 feet of the surface, and the Upper Santa Ana Valley Rialto-Colton Subbasin, which has groundwater within 56 feet of the ground surface. It is not known whether these depths are at the locations of the Tower Relocation Alternative.

Not all excavations would require dewatering. Also, these impacts would be temporary (occurring during construction only), and the amount of water to be extracted would be small in comparison to the volume of water in the groundwater basin. The groundwater supplies would not be depleted.

Additional shallow subsurface water could be encountered at other locations during construction, possibly requiring dewatering. Although there is a potential for local shallow groundwater to occur anywhere along the route, it is most likely to occur where structures are proposed at or near watercourse crossings, especially in the western portion of the route where rainfall is higher. Temporary dewatering of local groundwater during construction of transmission structures and underground portions of the route would not affect the major aquifers that are used for water supply.

Relocating certain towers approximately 50 feet farther from the southern edge of the ROW would have no effect on the amount of construction water that would be required compared to the Proposed Project. Excavation and auguring would be required for construction of both relocated and non-relocated structures. Dewatering of shallow groundwater may be required during construction of some of the towers (including the relocated towers), especially those that are located within the Coachella Valley San Gorgonio Pass Groundwater Basin. This alternative would not result in a greater need for dewatering compared to the Proposed Project because the relocated towers would be underlain by the exact same groundwater conditions as the Proposed Project structures that they are replacing. These impacts would be temporary (occurring during construction only), and the amount of water to be extracted would be small in comparison to the volume of water in the groundwater basin. The groundwater supplies would not be depleted.

Implementing Mitigation Measure UPS-1a (Use non-potable water for construction) would ensure potential impacts are avoided. (Full text of UPS-1a is provided in Section D.17.)

Impact WR-2: The project would cause erosion and siltation

Project construction would require excavation and grading for access roads and new transmission structures, trenching for underground facilities, and excavation and grading for the removal of existing structures. Disturbance of soil during construction could result in erosion of disturbed areas during rainfall events, with eroded soil potentially transported by runoff to downstream watercourses, streets or other areas.

This impact could also occur during project operation (after construction is complete). Lands disturbed by grading and excavation could continue to erode during rainfall events well after construction has ended. In most cases the risk to water quality would be minimal, though there would be some risk to public safety (e.g., if project-induced siltation were to obstruct traffic lanes in a street or highway).

SCE would develop and adhere to a SWPPP in conformance with the California General Permit for Discharges of Storm Water Associated with Construction Activities and the Federal General Permit for Storm Water Discharges Associated with Construction Activity on Tribal Land. The SWPPP would be required to implement best management practices to control surface erosion. Multiple SWPPPs are expected to be required for project construction. With implementation of Mitigation Measure WR-2a, APMs, and existing regulations, surface erosion impacts are expected to be minimal.

Drainage patterns could be disturbed through grading, construction of structure pads, and placement of structures and other above-ground structures in watercourses. Due to the nature of this project, any drainage pattern disturbance would be local. Local disturbances, for instance a structure constructed in a flow path could cause local scour and erosion that could extend to adjacent property, and result in deposition of eroded material into stream beds downstream of the area of disturbance. The effect could be temporary during construction, or long-term, as would be the case with a structure in a flow path, with similar risks to public safety as described for this impact above.

Access roads would be constructed in watercourses, and some structures may be located directly within major watercourses listed in Table D.19-1. APM HYDRO-1 requires maintaining the existing flow pattern where possible. Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) is recommended. Compliance with Sections 404 and 401 of the Clean

Water Act, and with Sections 1600–1616 of the California Fish and Game Code, would further reduce impacts to watercourses, and require mitigation. With mitigation, APMs, and compliance with existing regulations, erosion impacts related to disturbance of drainage patterns are expected to be minimal.

Under the Tower Relocation Alternative, most of the relocated structures that would be on level ground, but several structures to be moved would occur in the hills west of Cherry Valley Boulevard. The ground disturbance associated with the relocated structures would not result in more substantial erosion than would occur with the Proposed Project towers, which would also be on slopes. It is unlikely that ground disturbance in this alternative would result in accelerated erosion greater than that of the Proposed Project. As under the Proposed Project, erosion would be greatest for activities that take place on steep slopes. As a component of both the Proposed Project and this alternative, SCE would have to obtain the applicable NPDES General Permit for Storm Water Discharges Associated with Construction Activities.

Implementing Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) would ensure potential impacts are avoided. (Full text of Mitigation Measure WR-2a is provided in Section D.19.3.3.)

Impact WR-3: The project would cause flood damage

The rate or amount of surface runoff could be increased as a result of changes to the permeability of the ground surface through the construction of new impervious areas, or by removal of vegetation and alteration of natural soil surface characteristics by constructing and compacting new access roads. New impervious surfaces resulting from the project would be small and limited primarily to new structures and their foundations, resulting in negligible increase in runoff. For example, structure footings would be approximately 38 square feet in area. It would take 50 structures to have an equivalent impervious area as one medium-sized house.

Some new access roads in mountainous areas may be paved. Most disturbances that could result in changes in rainfall/runoff characteristics would consist of unpaved access roads, spur roads, temporary construction roads, structure pads, and temporary staging areas. Areas with the largest potential for increased runoff would be in areas currently not disturbed, which consist of most of Segments 2, 3, 4, 5 and 6.

Perceptible local increases in runoff rate and amount could occur as a result of this disturbance. However, the total area is small compared to the size of watersheds capable of producing most flooding. This disturbance is expected to result in minimal increase in runoff and little risk to water quality.

Most of the ground disturbance for roads would be temporary and for the duration of construction only. Minor local increases in runoff rate and volume are probable. In terms of the overall watersheds involved, this disturbance, and associated long-term increases in runoff rate and volume, is minimal.

All of the proposed new above-ground structures are relatively small and widely distributed, such that diversions of flood flows are unlikely with the exception of local minor drainage. None of the proposed structures are located in active channels.

Onsite damages related to channel erosion and vertical scour during a flood could be prevented by design of footings and burial depth to account for erosion and scour. The final design analysis has not been completed, and it is not known at this time if footings and burial depths would take erosion and scour into account. Mitigation Measure WR-3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) is recommended in order to reduce the potential for damage and interruption of power and communication services due to erosion and scour.

Under the Tower Relocation Alternative, the minor adjustment to the location of specific towers would not increase the amount of new impervious area that is created or the amount of vegetation removal or soil surface alteration. Therefore, adverse effects related to an increased amount or rate of runoff for this alternative would be the same as for the Proposed Project. None of the relocated towers would be sited within known floodplains, and therefore would not result in increased diversion or obstruction of flood flows compared to the Proposed Project. With implementation of APMs and mitigation measures, adverse effects related to flood damage for this alternative would be minor.

Implementing Mitigation Measure WR-3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) would ensure potential impacts are avoided. (Full text of Mitigation Measure WR-2a is provided in Section D.19.3.3.)

Impact WR-4: The project would degrade water quality, or violate a water quality standard or waste discharge requirement

Construction of the project would require excavation and grading for roads, trenches and structures, and for removal of existing structures. Disturbance of soil during construction could result in soil erosion and lowered water quality through increased turbidity and sediment deposition into local streams. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for suspended solids, total dissolved solids, sediment and turbidity. This impact would apply to all watercourses along the route (see list of watercourses in Table D.19-1).

Accidental spills or disposal of harmful materials used during construction could wash into and pollute surface waters or groundwater. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for toxicity and chemical constituents. This impact could affect all watercourses along the route.

As described above under Impact WR-2, construction of the Tower Relocation Alternative could lead to a minor increase in erosion compared to baseline conditions. This would be similar to the Proposed Project. That eroded soil could subsequently pollute downstream receiving waters. Most of the structures that would be relocated in this alternative would be located on level ground, but several relocations would occur in the hills west of Cherry Valley Boulevard. Construction of this alternative could also lead to water quality degradation due to the accidental release of hazardous materials (such as fuel, lubricants, coolants, and hydraulic and transmission fluids). The risk of water quality degradation through the accidental release of hazardous materials would be the same for this alternative as for the Proposed Project.

Mitigation Measures WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) and WR 3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) would require development of and adherence to erosion-control and flood protection plans during construction, conformance to NPDES MS4 Phase I and II requirements for post-construction BMPs, and adherence to applicable Water Quality Management Plans. Development and adherence to the SWPPP in conformance with applicable California or Federal General Permits for Discharges of Storm Water Associated with Construction Activity would require best management practices to prevent and control erosion and siltation during construction, prevent, contain and mitigate accidental spills during construction, require post-construction BMPs, and address treatment, if required, and disposal of, dewatered groundwater to prevent violation of water quality objectives or damaging beneficial uses. Compliance with Sections 401 and 404 of the Clean Water Act would also minimize this impact. Mitigation Measure HH-2a (Prepare a hazardous materials and waste management plan), described in Section D.10, Hazards and Hazardous Materials, would further ensure against potential surface and groundwater contamination.

With implementation of mitigation measures, adverse effects related to water quality degradation for this alternative would be minor.

D.19.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Four impacts were identified under the Proposed Project for water resources and hydrology. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.19.3.3, except where otherwise noted.

Impact WR-1: The project would deplete groundwater supplies or interfere with groundwater recharge

Under the Iowa Street 66 kV Underground Alternative, the short underground segment would not substantially increase the amount of construction water that would be required compared to the Proposed Project. More extensive dust control or dewatering may be required for the construction of the underground portion of this alternative compared to the Proposed Project in this segment. Although groundwater levels near the underground segment of the 66 kV subtransmission line are generally deeper than 60 feet and the need for additional dewatering compared to the Proposed Project is unlikely, locally elevated groundwater levels may be encountered where the underground line crosses Morey Arroyo and its associated floodplain. Any dewatering that would be required for installation of the underground line at this crossing would be temporary and minor, and would not deplete groundwater supplies.

Implementing Mitigation Measure UPS-1a (Use non-potable water for construction) would ensure potential impacts are avoided. (Full text of UPS-1a is provided in Section D.17.)

Impact WR-2: The project would cause erosion and siltation

The underground segment of subtransmission line in the Iowa Street 66 kV Underground Alternative would be located on level ground and has the potential to result in more siltation than would occur with the Proposed Project, due to the presence of trench spoils on the surface during construction. These soils could wash into surface drainages if not properly treated. Trenching for the underground line would involve more substantial ground disturbance than the excavation for the towers that it would replace, but this disturbance would be temporary and would not occur in an area of high erosion risk.

It is unlikely that ground disturbance in this alternative would result in accelerated erosion greater than that of the Proposed Project. As under the Proposed Project, erosion would be greatest for activities that take place on steep slopes. As a component of both the Proposed Project and this alternative, SCE would have to obtain the applicable NPDES General Permit for Storm Water Discharges Associated with Construction Activities. This permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP), which requires development and implementation of BMPs to identify and control erosion. In addition to compliance with existing regulation, the potential for this alternative to result in accelerated erosion would be reduced by implementing Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) described in Section D.19.3.3. Compliance with existing regulations and implementation of the mitigation noted above would ensure that the potential adverse effects related to erosion under this alternative would be minor.

Impact WR-3: The project would cause flood damage

This Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. The trenching associated with the underground line would not increase the amount of new impervious area that is created, because the underground segment would be in the paved roadway. Construction of the underground segment of 66 kV subtransmission line could increase slightly the amount of soil surface alteration, but this increased soil surface disturbance would be very minor and would not alter the rate or amount of runoff in the area. Therefore, adverse effects related to an increased amount or rate of runoff for this alternative would be the same as for the Proposed Project. Once the underground segment is installed and the roadway restored, this segment would have no effect on increased flooding. Implementing Mitigation Measure WR-3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) would ensure potential impacts are avoided. (Full text of Mitigation Measure WR-2a is provided in Section D.19.3.3.)

Impact WR-4: The project would degrade water quality, or violate a water quality standard or waste discharge requirement

Construction of the alternative would require excavation. Disturbance of soil during construction could result in soil erosion and lowered water quality through increased turbidity and sediment deposition into local streams. Accidental spills or disposal of harmful materials used during construction could wash into and pollute surface waters or groundwater. Groundwater basins potentially affected generally have groundwater deeper than 60 feet, which would be below the maximum depth of excavation for the underground segment. With shallow excavation and deeper groundwater, there is little likelihood that groundwater could be affected directly during construction.

As described above under Impact WR-2, construction of this underground alternative could lead to a minor increase in erosion compared to the Proposed Project, due to the more extensive construction required for the underground segment. That eroded soil could subsequently pollute downstream receiving waters. The underground segment of 66 kV subtransmission line in this alternative would be located on level ground and would not result in more substantial erosion than would occur with the Proposed Project.

Construction of this underground alternative could also increase the likelihood of water quality degradation compared with the Proposed Project, due to the accidental release of hazardous materials (such as fuel, lubricants, coolants, and hydraulic and transmission fluids). These hazardous materials could enter receiving waters directly or indirectly through subsequent runoff or infiltration.

This alternative would involve a greater amount of subsurface disturbance than the Proposed Project, which would increase the risk of hazardous materials infiltrating into the groundwater basin. However, this increased risk of groundwater contamination would be temporary and very minor. The risk of water quality degradation through the accidental release of hazardous materials would be the same for this alternative as for the Proposed Project.

Mitigation Measures WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) and WR 3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) would require development of and adherence to erosion-control and flood protection plans during construction, conformance to NPDES MS4 Phase I and II requirements for post-construction BMPs, and adherence to applicable Water Quality Management Plans. Development and adherence to the SWPPP in conformance with applicable California or Federal General Permits for Discharges of Storm Water Associated with Construction Activity would require best management practices to prevent and control erosion and siltation during construction, prevent, contain and mitigate accidental spills during construction, require post-construction BMPs, and address treatment, if required, and disposal of, dewatered groundwater to prevent violation of water quality objectives or damaging beneficial uses. Compliance with Sections 401 and 404 of the Clean Water Act would also minimize this impact. Mitigation Measure HH-2a (Prepare a hazardous materials and waste management plan), described in Section D.10, Hazards and Hazardous Materials, would further ensure against potential surface and groundwater contamination.

With implementation of mitigation measures, adverse effects related to water quality degradation for this alternative would be minor.

D.19.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double 220 circuit structures, and string all structures with higher-capacity conductors.

Four impacts were identified under the Proposed Project for water resources and hydrology. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.19.3.3, except where otherwise noted.

Impact WR-1: The project would deplete groundwater supplies or interfere with groundwater recharge

Construction Water Usage. SCE has estimated it would use up to a maximum of 250 acre-feet of water per year for construction purposes. The Phased Build Alternative is expected to have a somewhat small requirement because the alternative would involve less ground disturbance. Over the nearly 50-mile right-of-way, the water required could be obtained from any of 14 possible local water districts (see Table B-8 in Section B). These local water districts use a combination of surface water and groundwater for water supply.

SCE would not extract groundwater itself to use for dust control; this water would be provided by local or regional water purveyors. Mitigation Measure UPS-1a (Use non-potable water for construction purposes; see Section D.17) would require SCE to use non-potable water for dust control and soil compaction whenever feasible. If non-potable water is not available, SCE's construction water demand has the potential to affect local water supplies. As shown in Table B-8 in Section B, the total water supply from the 14 identified water districts exceeded total water use within those districts by 22,597 acre-feet in 2010 (the most recent year with complete data). Water supply and water use data was not available for all 14 of the identified districts. However, based on the best available and most current data, water supply exceeds water use in the area by almost an order of magnitude more than SCE's proposed construction water demand. Therefore, even if non-potable water is not available for dust suppression and soil compaction, the potential adverse effect on local water supplies due to Proposed Project construction water use would be very minor.

Dewatering. Construction excavation or augering would be required, up to 60 feet in depth, to construct structures and other underground facilities. Should groundwater be found in these excavations, dewatering may be necessary. This would be a direct impact to the groundwater resource.

Most of the groundwater aquifers underlying the project route are deeper than 60 feet and are unlikely to be affected by dewatering activities. Two possible exceptions are the Coachella Valley San Gorgonio

Pass Groundwater Basin, which has reported water levels within 47 feet of the surface, and the Upper Santa Ana Valley Rialto-Colton Subbasin, which has groundwater within 56 feet of the ground surface. It is not known whether these depths are at the locations of the Tower Relocation Alternative. There is a possibility that some dewatering could occur in the San Gorgonio Pass and Upper Santa Ana Valley Rialto-Colton groundwater basins during construction of structures, particularly those structures within the alluvial floodplains of the watercourses described in Table D.19-1.

The impacts to the San Gorgonio Pass Groundwater Basin and Upper Santa Ana Valley Rialto-Colton Groundwater Basin are expected to be minimal, because the maximum excavation or augering depth extends only a short distance into the highest reported level of the groundwater. Not all excavations would require dewatering. Also, these impacts would be temporary (occurring during construction only), and the amount of water to be extracted would be small in comparison to the volume of water in the groundwater basin. The groundwater supplies would not be depleted.

It is possible that additional shallow subsurface water could be encountered at other locations during construction, possibly requiring dewatering. Although there is a potential for local shallow groundwater to occur anywhere along the route, it is most likely to occur where structures are proposed at or near the watercourse crossings listed in Table D.19-1, especially in the western portion of the route where rainfall is higher. Temporary dewatering of local groundwater during construction of transmission structures and underground portions of the route would not affect the major aquifers that are used for water supply.

The Phased Build Alternative would reduce the amount of construction activity compared to the Proposed Project, and consequently would reduce the amount of water that is required for dust suppression during construction. As with the Proposed Project, the adverse effect on local water supplies due to construction water use for this alternative would be very minor. The severity of the adverse effect of construction water demand for this alternative would be reduced through implementation of Mitigation Measure UPS-1a (Use non-potable water for construction purposes). The full text of this mitigation measure is presented in the analysis for Utilities and Public Services in Section D.17.3.3.

Excavation and auguring would be required for construction of new 220 kV structures in this alternative. Dewatering of shallow groundwater may be required during construction of some of the towers, especially those that would be located within the Coachella Valley San Gorgonio Pass Groundwater Basin. This alternative would result in a lesser need for dewatering compared to the Proposed Project because fewer new structures would be constructed and the new 220 kV towers would be underlain by the exact same groundwater conditions as the Proposed Project structures that they would replace. These impacts would be temporary (occurring during construction only), and the amount of water to be extracted would be small in comparison to the volume of water in the groundwater basin. The groundwater supplies would not be depleted.

Impact WR-2: The project would cause erosion and siltation

Project construction would require excavation and grading for access roads and new transmission structures, trenching for underground facilities, and excavation and grading for the removal of existing structures. Disturbance of soil during construction could result in erosion of disturbed areas during rainfall events, with eroded soil potentially transported by runoff to downstream watercourses, streets or other areas. This would be an indirect impact requiring the action of rainfall and surface runoff to occur. For the Phased Build Alternative, the amount of ground disturbance would be less than the Proposed Project because some structures would be reused. This would reduce disturbance associated with tower disassembly and with tower site preparation.

Land disturbance caused by project construction activities, including existing unpaved access roads, could produce erosion and surface runoff. The highest potential for this impact to occur would be on new access roads and pads to be constructed for the proposed 220 kV structures, and in hilly areas with steep terrain such as the Timoteo Badlands area of Segment 3. San Timoteo Creek and local tributaries in Segment 3 would be potentially affected by sediment eroded from project work areas.

This impact could also occur during project operation (after construction is complete). Lands disturbed by grading and excavation could continue to erode during rainfall events well after construction has ended. In most cases the risk to water quality would be minimal, though there would be some risk to public safety (e.g., if project-induced siltation were to obstruct traffic lanes in a street or highway).

SCE has committed to implementation of three APMs that would reduce erosion: APM HYDRO-2, APM HYDRO-3, and APM BIO-1. While these APMs would reduce many impacts to water quality and would address short-term and long-term soil erosion induced by construction, Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits; full text presented below) adds detail and is required to ensure that erosion is controlled. Mitigation Measure WR-2a supersedes APMs HYDRO-2 and HYDRO-3.

As described in Section B.3.1.2 (Section B, Project Description), SCE would develop and adhere to a SWPPP in conformance with the California General Permit for Discharges of Storm Water Associated with Construction Activities and the Federal General Permit for Storm Water Discharges Associated with Construction Activity on Tribal Land. The SWPPP would be required to implement best management practices to control surface erosion. Multiple SWPPPs are expected to be required for project construction. With implementation of Mitigation Measure WR-2a, APMs, and existing regulations, surface erosion impacts are expected to be minimal.

Drainage patterns could be disturbed through grading, construction of structure pads, and placement of structures and other above-ground structures in watercourses. Due to the nature of this project, with small-footprint structures spread over a large area, any drainage pattern disturbance would be local. Local disturbances, for instance a structure constructed in a flow path could cause local scour and erosion that could extend to adjacent property, and result in deposition of eroded material into stream beds downstream of the area of disturbance. The effect could be temporary during construction, or long-term, as would be the case with a structure in a flow path, with similar risks to public safety as described for this impact above. This impact could occur anywhere along the project route where construction would be in flow paths. The most likely areas of effect are in the vicinity of the watercourses listed in Table D.19-1.

Access roads would be constructed in watercourses, and some structures may be located directly within major watercourses listed in Table D.19-1. APM HYDRO-1 requires maintaining the existing flow pattern where possible. Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) is recommended. Compliance with Sections 404 and 401 of the Clean Water Act, and with Sections 1600–1616 of the California Fish and Game Code, would further reduce impacts to watercourses, and require mitigation. With mitigation, APMs, and compliance with existing regulations, erosion impacts related to disturbance of drainage patterns are expected to be minimal.

The Phased Build Alternative would reduce the amount of ground disturbance compared to the Proposed Project, and consequently would reduce the potential to cause or accelerate erosion and siltation. As a component of both the Proposed Project and this alternative, SCE would have to obtain the applicable NPDES General Permit for Storm Water Discharges Associated with Construction Activity. This permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP), which requires development and implementation of BMPs to identify and control erosion. In addition to compliance with existing regulations, the potential for this alternative to result in accelerated erosion would be reduced through implementation of Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits). Compliance with existing regulations and implementation of the mitigation noted above would ensure that the potential adverse effects related to erosion under this alternative would be minor.

Drainage patterns could be disturbed through grading, construction of structure pads, and placement of above-ground structures in watercourses. The disturbance of drainage patterns under this alternative would be reduced compared to the Proposed Project because one set of existing 220 kV structures would be left in place and ground disturbance would be reduced. Alterations of existing drainage patterns would be minimized through implementation of APM HYDRO-1, which requires maintaining the existing flow pattern where possible. Adverse effects to drainage patterns would be further reduced through implementation of Mitigation Measure WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits). With implementation of APMs and mitigation, and compliance with existing regulations, adverse effects related to the disturbance of drainage patterns for this alternative are expected to be minor.

Impact WR-3: The project would cause flood damage

The rate or amount of surface runoff could be increased as a result of changes to the permeability of the ground surface through the construction of new impervious areas, or by removal of vegetation and alteration of natural soil surface characteristics by constructing and compacting new access roads. By retaining some structures rather than removing and replacing them, less ground disturbance and compaction would occur. New impervious surfaces resulting from the project would be small and limited primarily to new structures and their foundations, resulting in negligible increase in runoff. For example, structure footings would be approximately 38 square feet in area. It would take 50 structures to have an equivalent impervious area as one medium-sized house.

Some new access roads in mountainous areas may be paved. Most disturbances that could result in changes in rainfall/runoff characteristics would consist of unpaved access roads, spur roads, temporary construction roads, structure pads, and temporary staging areas. Areas with the largest potential for increased runoff would be in areas currently not disturbed, which consist of most of Segments 2, 3, 4, 5 and 6.

Total disturbance during construction is estimated at less than 5,000 acres, averaging about 104 acres per mile of route. It would be less under the Phased Build Alternative. Perceptible local increases in runoff rate and amount could occur as a result of this disturbance. However, the total area is small compared to the size of watersheds capable of producing most flooding. The San Timoteo Creek watershed, in which roughly half of the disturbance would occur, has an area of 125 square miles at Loma Linda, meaning total project-related ground disturbance in that watershed would be about 2 percent of the total area of the watershed for the Proposed Project, and less for the Phased Build Alternative. This disturbance is expected to result in minimal increase in runoff and little risk to water quality.

Most of the ground disturbance for roads would be temporary and for the duration of construction only. Much of the total disturbance would be restored to natural conditions. Permanent that would be land converted from natural ground to mostly unpaved access roads and pads. Minor local increases in runoff rate and volume are probable. In terms of the overall watersheds involved, this disturbance, and associated long-term increases in runoff rate and volume, is minimal.

APM HYDRO-1 requires maintaining the existing flow pattern where possible, which would minimize the potential for diverting or obstructing flow in a manner that would induce or exacerbate flooding, as would compliance with Clean Water Act Section 404. All of the proposed new above-ground structures are relatively small and widely distributed, such that diversions of flood flows are unlikely with the exception of local minor drainage. None of the proposed structures are located in active channels, but several (as shown in Tables D.19-1 and D.19-3) are within potentially active braided areas of alluvial fans which could become active channels.

Table D.19-3 defines the locations where new structures would be installed within known floodplains. In the event of large floods the structures would cause local flow turbulence, but damaging flow diversions due to the presence of the structure are unlikely because of the small tower footprint relative to the width of the floodplain, and the placement of most structures outside the active channel where the potential for damaging diversions is greatest. Those structures located in braided alluvial fans will be in areas where flow paths are naturally subject to variation and are of much greater extent than the footprint of the towers.

Flood-related damage to project structures is possible in the event that lateral erosion of watercourse banks or vertical scour of the stream bed during a large flood reaches and destabilizes a structure or other underground project feature. Transmission structures could be destabilized if footings are not designed for anticipated stream scour, which may not be considered in the design process for structures not currently in active channels. Direct effects to public safety could occur through scour-related destruction of or damage to the transmission structure, resulting in tower collapse and interruption of electric service. At least four structures (5N34, 5S34, 5N54, 5S35) would be located within 100 feet of the active channel of the San Gorgonio River. The active channel at this point is approximately 450 feet wide. The channel banks in this general area are known to have moved by erosion up to 130 feet in a flood or floods that occurred between 2004 and 2005, and it is possible these four structures could be captured by the channel during future large floods. Other structures within the active braided area of the alluvial fans emanating from the San Bernardino Mountains could also be at risk (see Tables D.19-1 and D.19-2).

As described in Section D.19.1.2.10 (Telecommunications Facilities), a portion of a new underground telecommunications line would be within the designated floodway of Smith Creek. The proposed line would not obstruct flow, and would therefore be compatible with floodway uses, but the line could be uncovered and damaged by vertical scour during a large flood, resulting in possible communication outages.

Onsite damages related to channel erosion and vertical scour during a flood could be prevented by design of footings and burial depth to account for erosion and scour. The final design analysis has not been completed, and it is not known at this time if footings and burial depths would take erosion and scour into account. Mitigation Measure WR-3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) is recommended in order to reduce the potential for damage and interruption of power and communication services due to erosion and scour.

Under the Phased Build Alternative, any structures that are placed in active channels or floodplains could be destabilized or destroyed by scour from floodwater. These structures also could divert or obstruct flood flows, resulting in changes to patterns of off-site flooding. Some of the new 220 kV structures would be sited within known floodplains, but these structures would not differ substantially in type or location compared to the Proposed Project and therefore would not result in increased diversion or obstruction of flood flows. The potential for this alternative to cause flood damage would be similar to the Proposed Project. This adverse effect would be reduced through implementation of APM HYDRO-1, which requires maintenance of the existing flow pattern where possible. This adverse effect would be further reduced through implementation of Mitigation Measure WR-3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements). With implementation of APMs and mitigation measures, adverse effects related to flood damage for this alternative would be minor.

Impact WR-4: The project would degrade water quality, or violate a water quality standard or waste discharge requirement

Construction of the project would require excavation and grading for roads, trenches and structures, and for removal of existing structures. Disturbance of soil during construction could result in soil erosion and lowered water quality through increased turbidity and sediment deposition into local streams. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for suspended solids, total dissolved solids, sediment and turbidity. This impact would apply to all watercourses along the route (see list of watercourses in Table D.19-1). However, with less ground disturbance under the Phased Build Alternative, there would be less potential erosion.

Accidental spills or disposal of harmful materials used during construction could wash into and pollute surface waters or groundwater. Materials that could contaminate the construction area or spill or leak include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for toxicity and chemical constituents. This impact could affect all watercourses along the route.

The dry nature of most of the surface streams is such that should material spills occur during construction, these could easily be cleaned up prior to water being contaminated (because water is not generally flowing). Groundwater basins potentially affected generally have groundwater deeper than 60 feet, which in nearly all cases would be below the maximum depth of excavation (see the description of Impact WR-1). With shallow excavation and deeper groundwater, there is little likelihood that groundwater could be affected directly during construction.

Mitigation Measures WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) and WR 3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements) would require development of and adherence to erosion-control and flood protection plans during construction, conformance to NPDES MS4 Phase I and II requirements for post-construction BMPs, and adherence to applicable Water Quality Management Plans. Development and adherence to the SWPPP in conformance with applicable California or Federal General Permits for Discharges of Storm Water Associated with Construction Activity would require best management practices to prevent and control erosion and siltation during construction, prevent, contain and mitigate accidental spills during construction, require post-construction BMPs, and address treatment, if required, and disposal of, dewatered groundwater to prevent violation of water quality objectives or damaging beneficial uses. Compliance with Sections 401 and 404 of the Clean Water Act would also minimize this impact. Mitigation Measure HH-2a (Prepare a hazardous materials and waste management plan), described in Section D.10, Hazards and Hazardous Materials, would further ensure against potential surface and groundwater contamination.

As described above under Impact WR-2, construction of the Phased Build Alternative could lead to a minor increase in erosion compared to baseline conditions, but would be less than the Proposed Project. That eroded soil could subsequently pollute downstream receiving waters. This alternative would result in a decreased amount of construction activity and consequently a decreased use of hazardous materials. Hazardous materials would not be handled or stored differently compared to the Proposed Project. The risk of water quality degradation through the accidental release of hazardous materials would be slightly reduced for this alternative compared to the Proposed Project.

The risk of water quality degradation through erosion and sedimentation or the accidental release of hazardous materials would be slightly reduced for this alternative compared to the Proposed Project. The severity of this adverse effect would be further reduced through implementation of Mitigation Measure WR-2a (Implement and Erosion Control Plan and demonstrate compliance with water quality permits) and Mitigation Measure HH-2a (Prepare a hazardous materials and waste management plan). The full text of this mitigation measure is presented in the analysis for Hazards and Hazardous Materials in Section D.10.3.3. With implementation of mitigation measures, adverse effects related to water quality degradation for this alternative would be minor.

D.19.5 Environmental Impacts of No Action Alternative

D.19.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

Devers to Beaumont Substation. The 500 kV alignment crosses the Whitewater River near I-10 and makes several crossings of the San Gorgonio River in locations where the river is in a braided condition with potential for flow to follow several channel paths. Groundwater in the area is deep; therefore, groundwater quality degradation is not likely. The route between Devers and Beaumont Substations is particularly sensitive to erosion and sedimentation because of the steep terrain crossed along the lower elevations of the San Jacinto Mountains south of I-10. Construction can affect water quality through soil erosion and sedimentation as well as through the spill of harmful materials used during constructions, such as fuels, lubricants, and solvents. Measures to reduce or prevent impacts include implementation of a Storm Water Pollution and Prevention Plan, a Spill Prevention, Countermeasure, and Control Plan, a hazardous materials management and emergency response plan, training of workers, construction monitoring, revegetation of disturbed areas, and installation of permanent erosion control structures as needed. In the Devers to Valley segment of DPV2, the EIR/EIS identified that construction of the transmission line would have less than significant impacts on water resources with the implementation of mitigation.

Beaumont Substation. The substation would be located on 40 acres of the gently rolling topography, which would need to be levelled through cutting and filling of the ground surface. This could result in extensive exposed bare ground that would be susceptible to erosion in the event of a storm. The water quality and erosion control measures required for construction of the 500 kV line would be applicable to the substation site as well. Typically, the area within substations is covered with crushed rock to allow infiltration of water and prevent erosion. Surfaces required for movement of vehicles and equipment area paved and, based on local rainfall history, runoff detention basins are provided. Other areas disturbed by earthwork and grading are revegetated.

Beaumont to El Casco Substation. Much of the land between Beaumont and El Casco Substations is hilly, with largely grass covered slopes and ridges. Part of the route parallels San Timoteo Creek, but would be outside of the floodplain. Similar erosion, sedimentation, and spill impacts could occur on the 220 kV route as could occur on the 500 kV line and at the Beaumont Substation, and similar protective measures would be required during construction.

D.19.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. The route traverses two groundwater basins: the San Jacinto Groundwater Basin in the Perris Valley and the Elsinore Groundwater Basin between approximately MP 20 and MP 22, near the Temescal Wash. Although locally elevated pockets of groundwater may be encountered (especially near Temescal Wash), groundwater in both basins is generally encountered below the depth of excavation for transmission structures and no required dewatering is expected. Also, the total area of new impervious surface in this alternative would be small and dispersed throughout the corridor so no interference with groundwater recharge is expected.

Water would be required during construction of this alternative for dust suppression and soil conditioning, but this water demand would be temporary and is not expected to substantially deplete groundwater resources. Mitigation measures such as groundwater monitoring, the use of non-potable water, and the importation of water from outside of the basin would reduce the severity of adverse effects to groundwater levels. Disturbance of soil during construction could result in erosion of disturbed areas during rainfall events, with eroded soil potentially transported by runoff to downstream watercourses, streets or other areas. The highest potential for this impact to occur would be on new or improved access roads and pads to be constructed for the proposed 500 kV structures, and in hilly areas with steep terrain such as the foothills surrounding Steele Peak and Estelle Mountain, and in the Cleveland National Forest (CNF).

Portions of the new 500 kV route would be located within 100-year floodplains, including floodplains in the Perris Valley and near Temescal Wash. Transmission structures that are sited in floodplains could block or divert flood flows or be subject to damage or collapse from scour. In areas where floodplains cannot be avoided, transmission structures would be designed and engineered so as not to block or divert flood flows and to withstand damage from scour. Construction and operation of this alternative could lead to water quality degradation or the violation of water quality standards through accelerated erosion and sedimentation or the accidental release of hazardous materials. Although no impaired waterbodies are crossed by this alternative, several impaired waterbodies lie downstream of the corridor, including: Railroad Canyon Reservoir approximately 1 mile south of MP 6, Temescal Creek approximately 1 mile south of MP 12.5, and Silverado Creek approximately 0.25 to 1 mile south of the corridor from MP 24 to MP 32 in the CNF. Measures to reduce or prevent impacts include implementation of a Storm Water Pollution Prevention Plan, a Spill Prevention, Countermeasure, and Control Plan, a hazardous materials management and emergency response plan, training of workers, construction monitoring, revegetation of disturbed areas, and installation of permanent erosion control structures as needed.

D.19.6 Mitigation Monitoring, Compliance, and Reporting

Table D.19-4 presents the mitigation monitoring, compliance, and reporting actions for water resources and hydrology.

Table D.19-4. Mitigation Monitoring Program – Water Resources and Hydrology

MITIGATION MEASURE	**WR-2a: Implement an Erosion Control Plan and demonstrate compliance with water quality permits.** SCE shall develop and submit an Erosion Control Plan to the CPUC and BLM for approval at least 60 days prior to construction. The Erosion Control Plan may be part of the Stormwater Pollution Prevention Plan, and kept onsite and readily available on request. Soil disturbance at structures and access roads is to be minimized and designed to prevent long-term erosion. The Erosion Control Plan shall include: ▪ The location of all soil-disturbing activities, including but not limited to new and/or improved access and spur roads ▪ The location of all streams and drainage structures that would be directly affected by soil-disturbing activities (such as stream crossings or public storm drains by the right-of-way and access roads). ▪ BMPs to protect drainage structures, such as public storm drains, downstream of soil disturbance activities. ▪ Design features to be implemented to minimize erosion during construction and during operation (if the project feature is to remain permanent after construction). ▪ If soil cement is proposed, the specific locations must be defined in the Plan, and evidence of approval by the appropriate jurisdiction shall be submitted to the CPUC and BLM prior to its use. ▪ If design features include the use of retaining structures and/or walls, the design of the features shall be consistent with Mitigation Measure VR-3a (Reduce color contrast of retaining walls and land scars). ▪ The location and type of all BMPs that would be installed to prevent off-site sedimentation and to protect aquatic resources. ▪ Specifications for the implementation and maintenance of erosion control measures and a description of the erosion control practices, including appropriate design and installation details. ▪ Proposed schedule for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, if required. Erosion control/SWPPP inspection reports shall be provided to the CPUC EM. Locations requiring erosion control/SWPPP corrective actions/repairs shall be tracked, including dates of completion, and documented during inspections. Inspections and monitoring shall be performed in compliance with the Federal and California Construction General Permits. The inspection reports shall be maintained and kept in their respective SWPPP, be kept on site as required by the Federal and State Construction General Permits, and be made available to the RWQCB, CPUC, BLM, counties, local municipalities, and tribal governments, on request. Additionally, an Annual Report shall be filed for each reporting period in compliance with Federal and California Construction General Permit reporting requirements. SCE shall submit to the CPUC and BLM Grading Plans that define the locations of the specific features listed above. SCE shall submit to the CPUC and BLM evidence of possession of applicable required permits for the representative land disturbance prior to engaging in soil-disturbing construction/demolition activities. Such permits may include, but are not limited to, a CWA Section 402 NPDES California General Permit for Storm Water Discharges Associated with Construction Activities (General Permit) from the applicable Regional Water Quality Control Board(s) (RWQCBs), and the Federal General Permit for Storm Water Discharges Associated with Construction Activities on Tribal Land. Prior to ground disturbance in stream channels or other waters jurisdictional to the State of California or the Federal Government, SCE shall obtain a Streambed Alteration Agreement from the California Department of Fish and Wildlife, a Section 404 permit from the USACE, and a CWA Section 401 certification from the SWRCB.
Location	Entire project ROW
Monitoring / Reporting Action	CPUC/BLM monitor to verify that the applicable SWPPP (Including Erosion Control Plan) has been prepared and permitted prior to the start of soil disturbing activities of the applicable construction project components. The SWPPPs will be prepared in compliance with Mitigation Measure WR-2a and the applicable Federal and California Construction General Permit Requirements.

Table D.19-4. Mitigation Monitoring Program – Water Resources and Hydrology

Effectiveness Criteria	Erosion and sedimentation are minimized.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office.
Timing	At least 60 days prior to construction.
MITIGATION MEASURE	**WR-3a: Implement flood, erosion, and scour protection for aboveground and belowground improvements.** SCE shall make a determination during final project design phase as to the lateral erosion and 100-year scour potential for watercourses near proposed structures and other above-ground features, as well as new underground conduits. This determination shall be made by a registered professional engineer with expertise in river mechanics. If the determination identifies specific structures or underground conduits that may be subject to scour or lateral movement of a stream channel, these structures shall be protected against 100-year scour and/or lateral erosion through modifications of the foundation design, or otherwise in a manner determined to be appropriate by the river mechanics engineer. SCE shall provide the determination of lateral erosion and scour potential, and documentation of corrective actions and the engineering basis thereof, to the CPUC and BLM prior to the start of construction (as defined in Mitigation Measure EM-1a (Prepare monitoring plan). SCE shall evaluate and conform to NPDES MS4 Phase I and II requirements for post-construction BMPs and, in consultation with San Bernardino and Riverside Counties and applicable local jurisdictions and agencies, prepare or conform to existing Water Quality Management Plans where determined necessary.
Location	Entire project ROW
Monitoring / Reporting Action	CPUC/BLM monitor to verify that determination meets defined requirements.
Effectiveness Criteria	Flood and scour damage is minimized.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office.
Timing	At least 60 days prior to construction.

D.19.7 References

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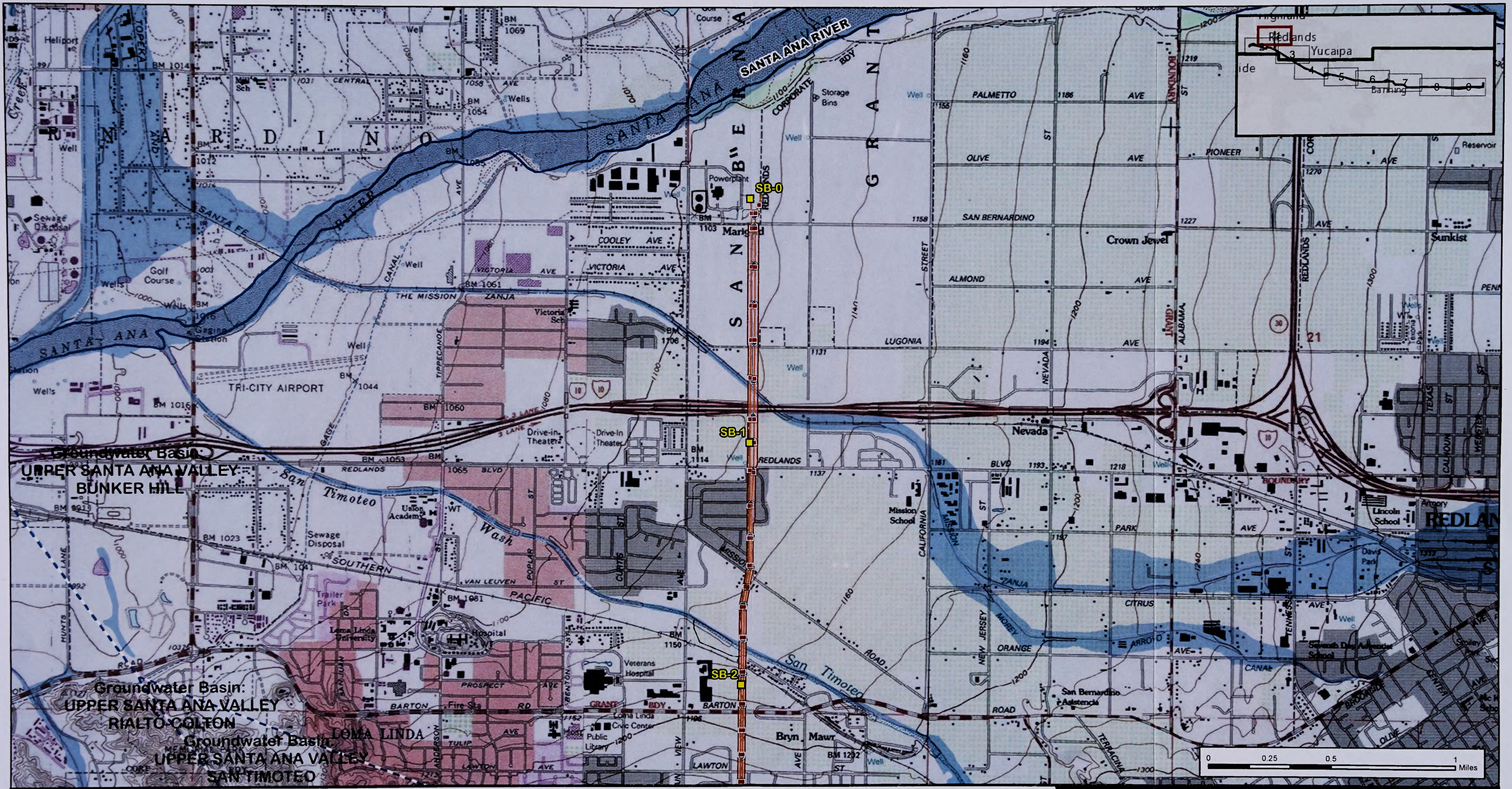

Sources: SCE 2013,
CA Bulletin 118,
CA Dept. of Cons.

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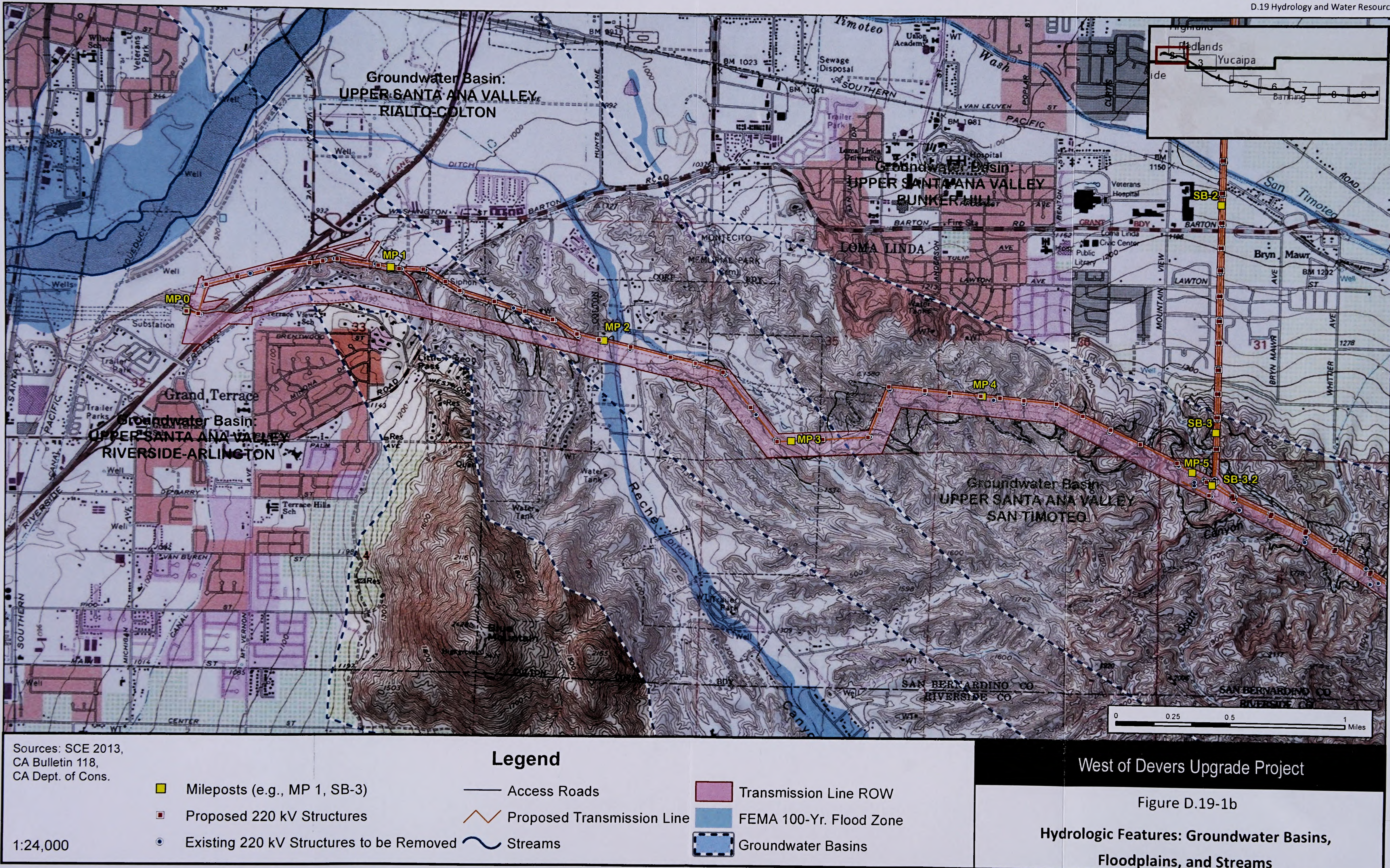
Legend

- Mileposts (e.g., MP 1, SB-3)
- Proposed 220 kV Structures
- Existing 220 kV Structures to be Removed
- Access Roads
- Proposed Transmission Line
- Streams
- Transmission Line ROW
- FEMA 100-Yr. Flood Zone
- Groundwater Basins

West of Devers Upgrade Project

Figure D.19-1a

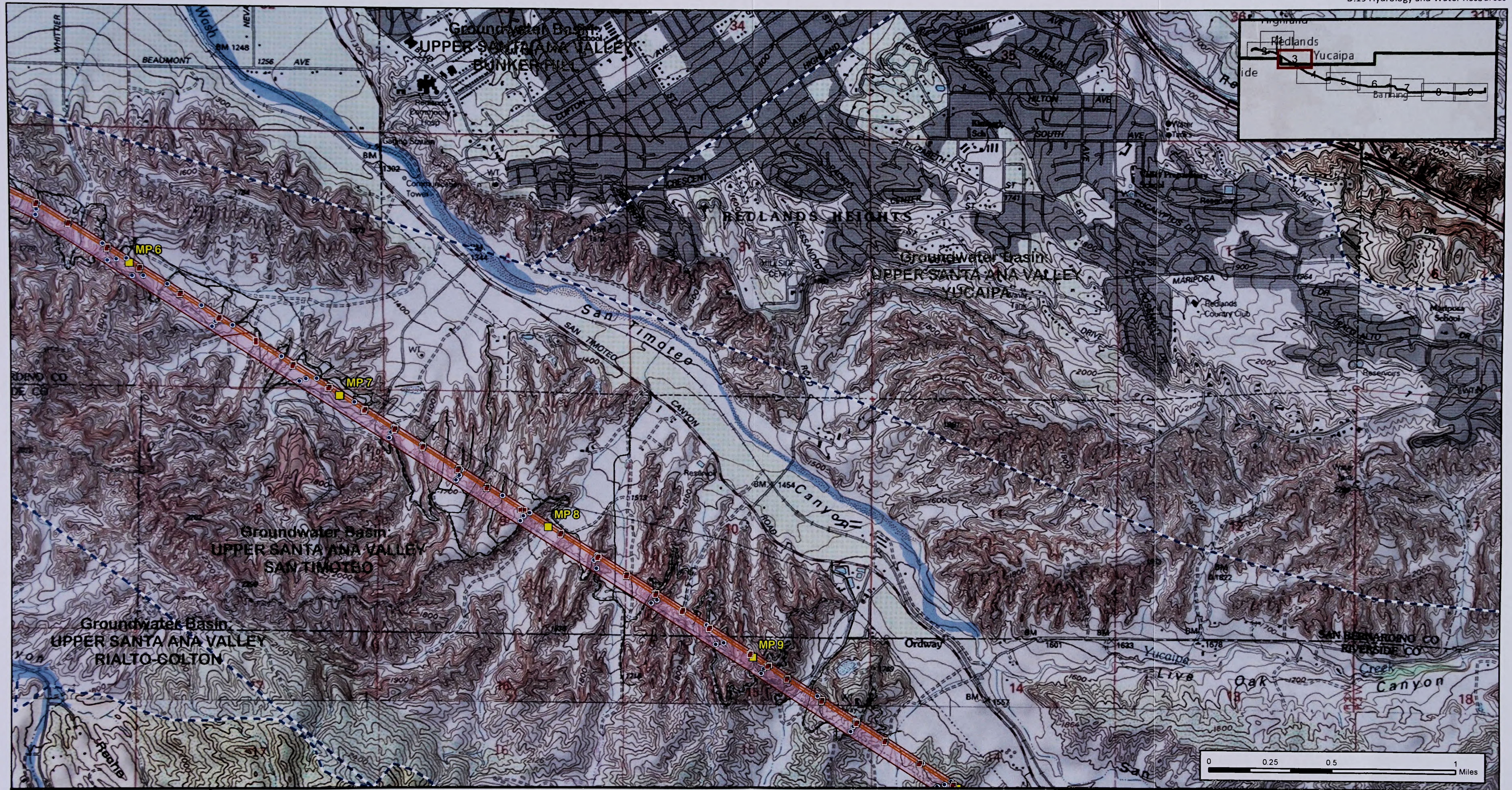
Hydrologic Features: Groundwater Basins, Floodplains, and Streams



West of Devers Upgrade Project

Figure D.19-1b

Hydrologic Features: Groundwater Basins, Floodplains, and Streams



Sources: SCE 2013,
CA Bulletin 118,
CA Dept. of Cons.

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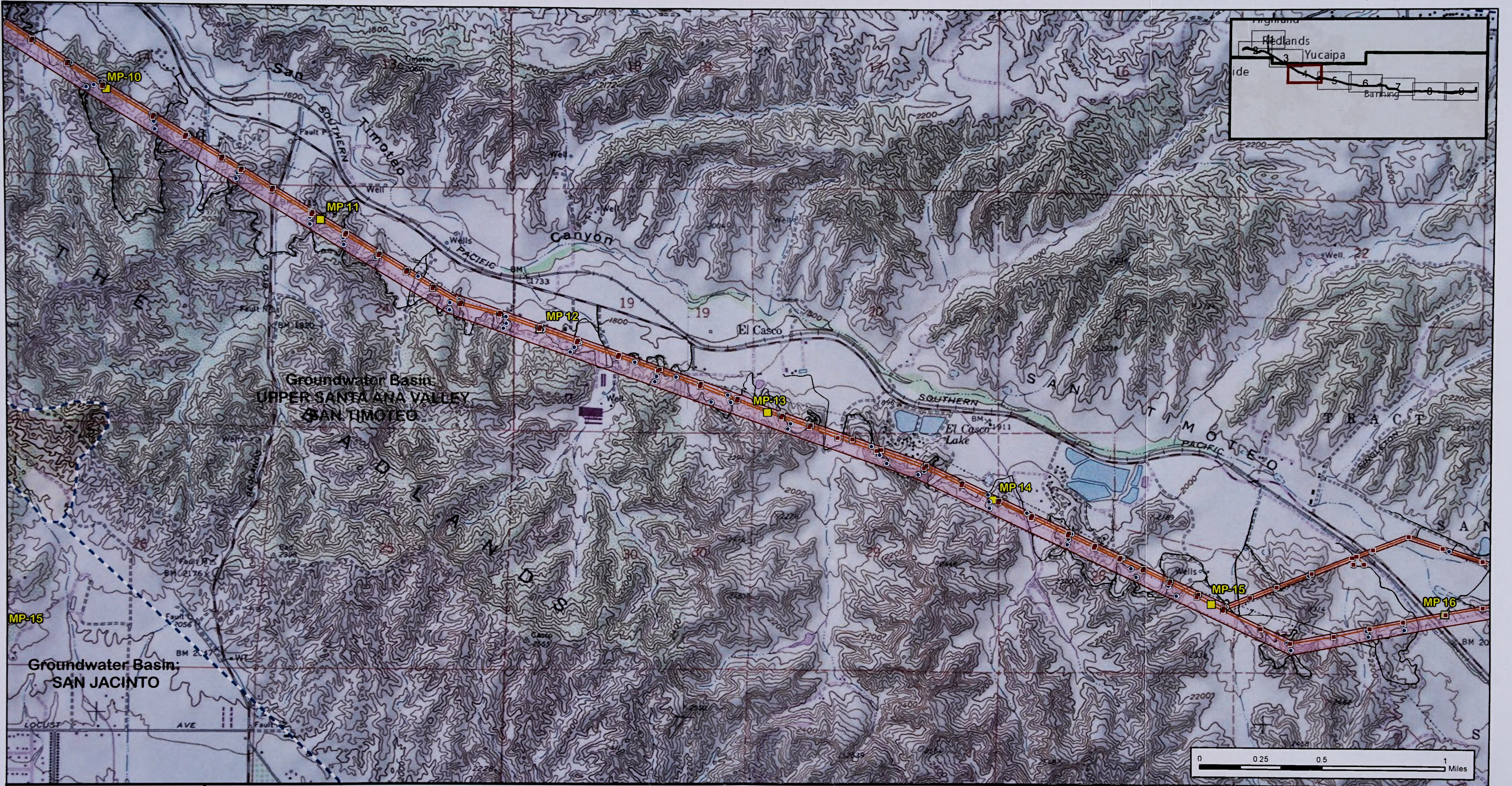
Legend

- Mileposts (e.g., MP 1, SB-3)
- Proposed 220 kV Structures
- Existing 220 kV Structures to be Removed
- Access Roads
- Proposed Transmission Line
- Streams
- Transmission Line ROW
- FEMA 100-Yr. Flood Zone
- Groundwater Basins

West of Devers Upgrade Project

Figure D.19-1c

Hydrologic Features: Groundwater Basins, Floodplains, and Streams



Sources: SCE 2013,
CA Bulletin 118,
CA Dept. of Cons.

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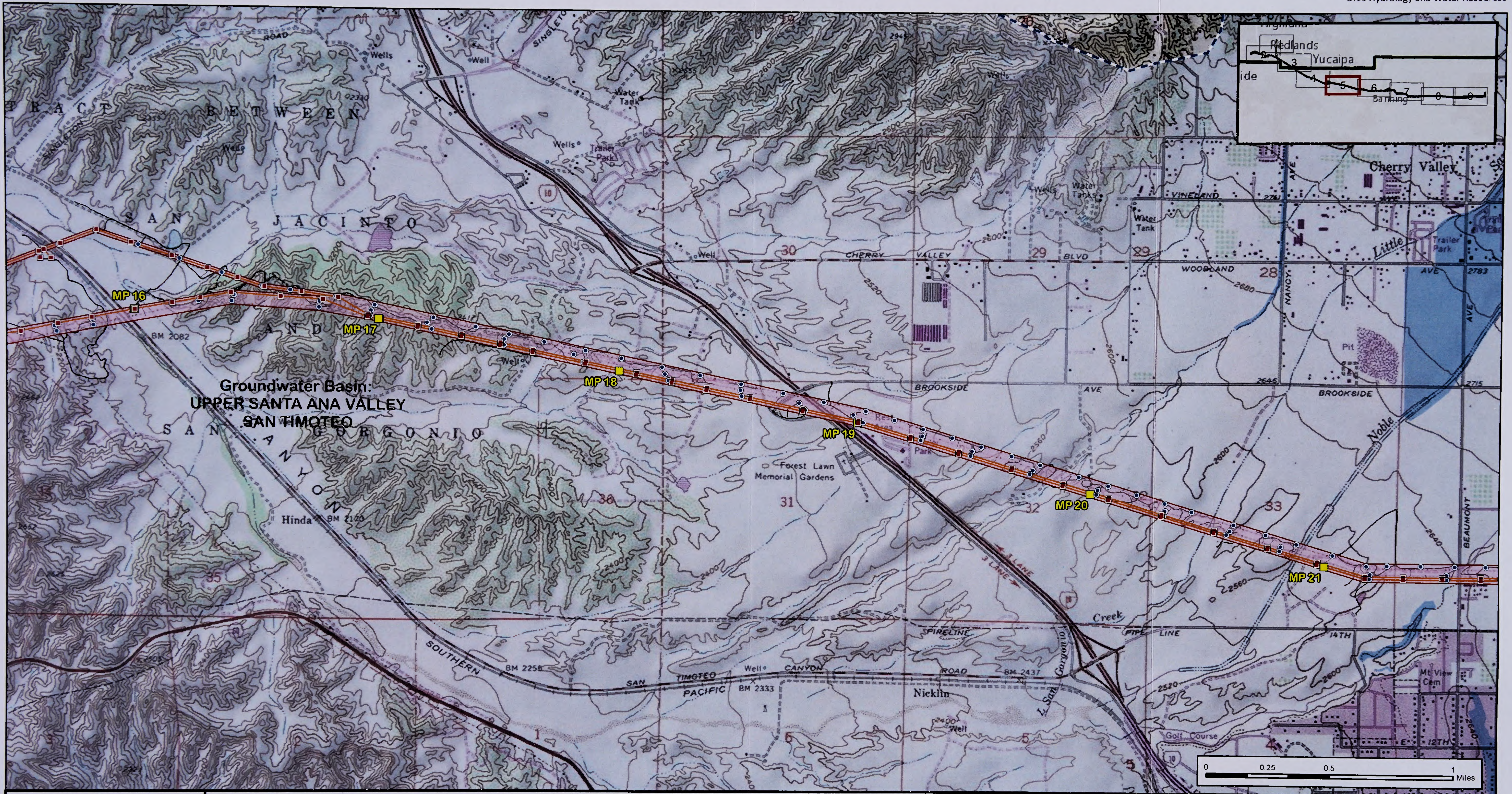
Legend

- Mileposts (e.g., MP 1, SB-3)
- Proposed 220 kV Structures
- Existing 220 kV Structures to be Removed
- Access Roads
- Proposed Transmission Line
- Streams
- Transmission Line ROW
- FEMA 100-Yr. Flood Zone
- Groundwater Basins

West of Devers Upgrade Project

Figure D.19-1d

Hydrologic Features: Groundwater Basins, Floodplains, and Streams



Sources: SCE 2013,
CA Bulletin 118,
CA Dept. of Cons.

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Legend

- Mileposts (e.g., MP 1, SB-3)
- Proposed 220 kV Structures
- Existing 220 kV Structures to be Removed
- Access Roads
- Proposed Transmission Line
- Streams
- Transmission Line ROW
- FEMA 100-Yr. Flood Zone
- Groundwater Basins

West of Devers Upgrade Project

Figure D.19-1e

Hydrologic Features: Groundwater Basins, Floodplains, and Streams

July 2016

Sources: SCE 2013, CA Bulletin 118, CA Dept. of Cons.

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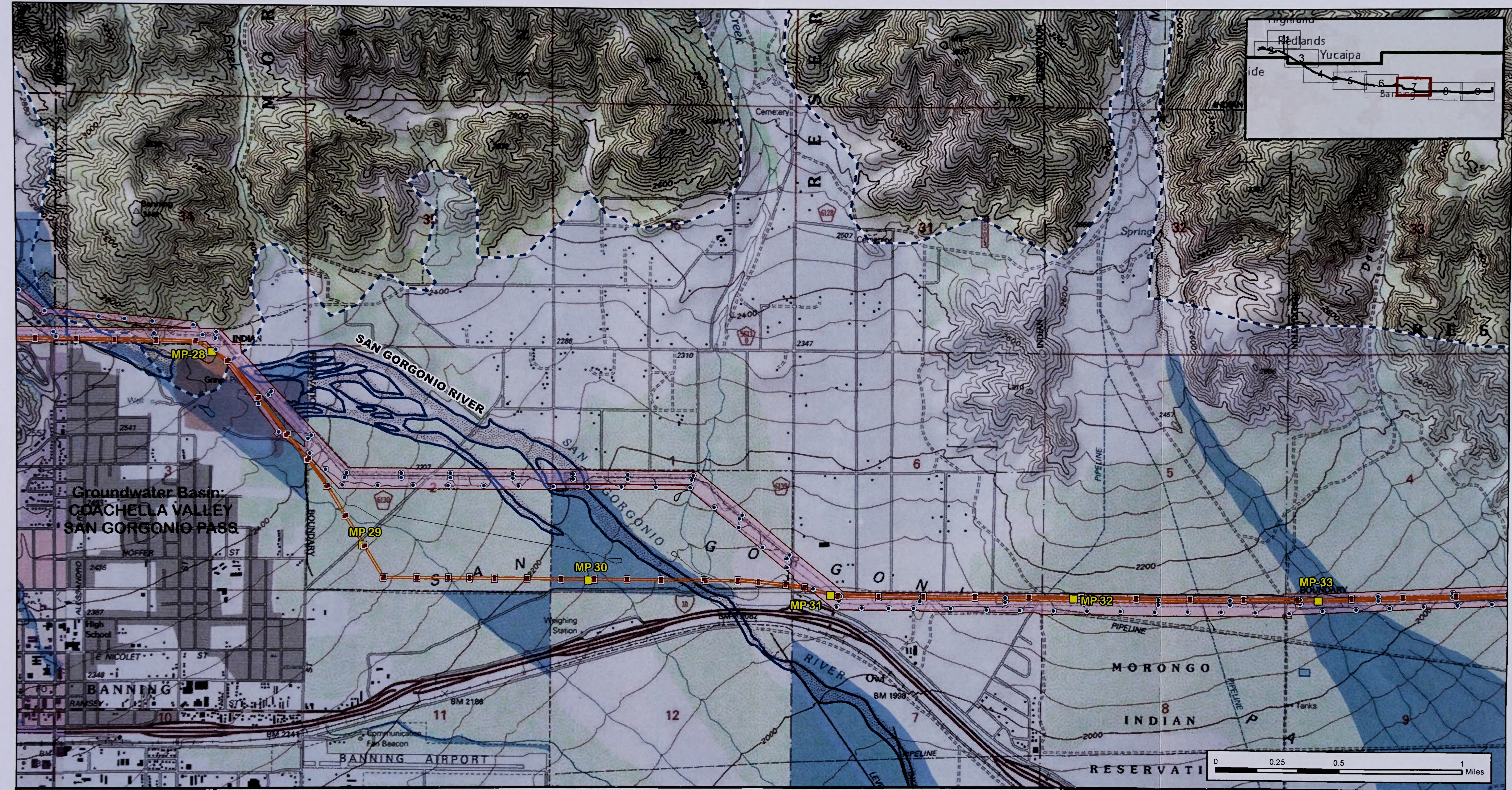
Legend

- Mileposts (e.g., MP 1, SB-3)
- Proposed 220 kV Structures
- Existing 220 kV Structures to be Removed
- Access Roads
- Proposed Transmission Line
- Streams
- Transmission Line ROW
- FEMA 100-Yr. Flood Zone
- Groundwater Basins

West of Devers Upgrade Project

Figure D.19-1f

Hydrologic Features: Groundwater Basins, Floodplains, and Streams



Sources: SCE 2013, CA Bulletin 118, CA Dept. of Cons.

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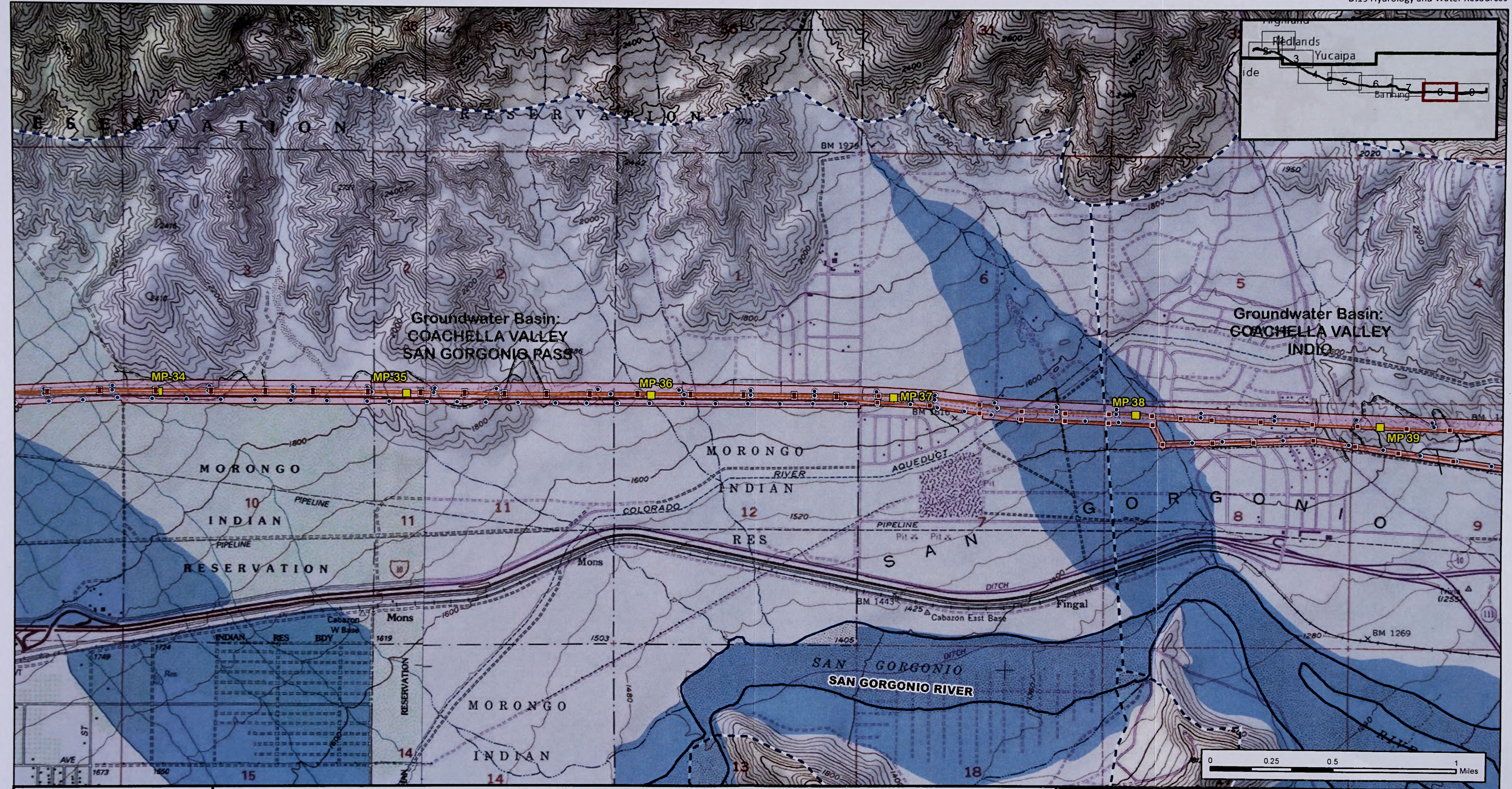
Legend

Mileposts (e.g., MP 1, SB-3)	Access Roads
Proposed 220 kV Structures	Proposed Transmission Line
Existing 220 kV Structures to be Removed	Streams
Transmission Line ROW	FEMA 100-Yr. Flood Zone
Groundwater Basins	

West of Devers Upgrade Project

Figure D.19-1g
Hydrologic Features: Groundwater Basins, Floodplains, and Streams

July 2016



Sources: SCE 2013,
CA Bulletin 118,
CA Dept. of Cons.

1:24,000

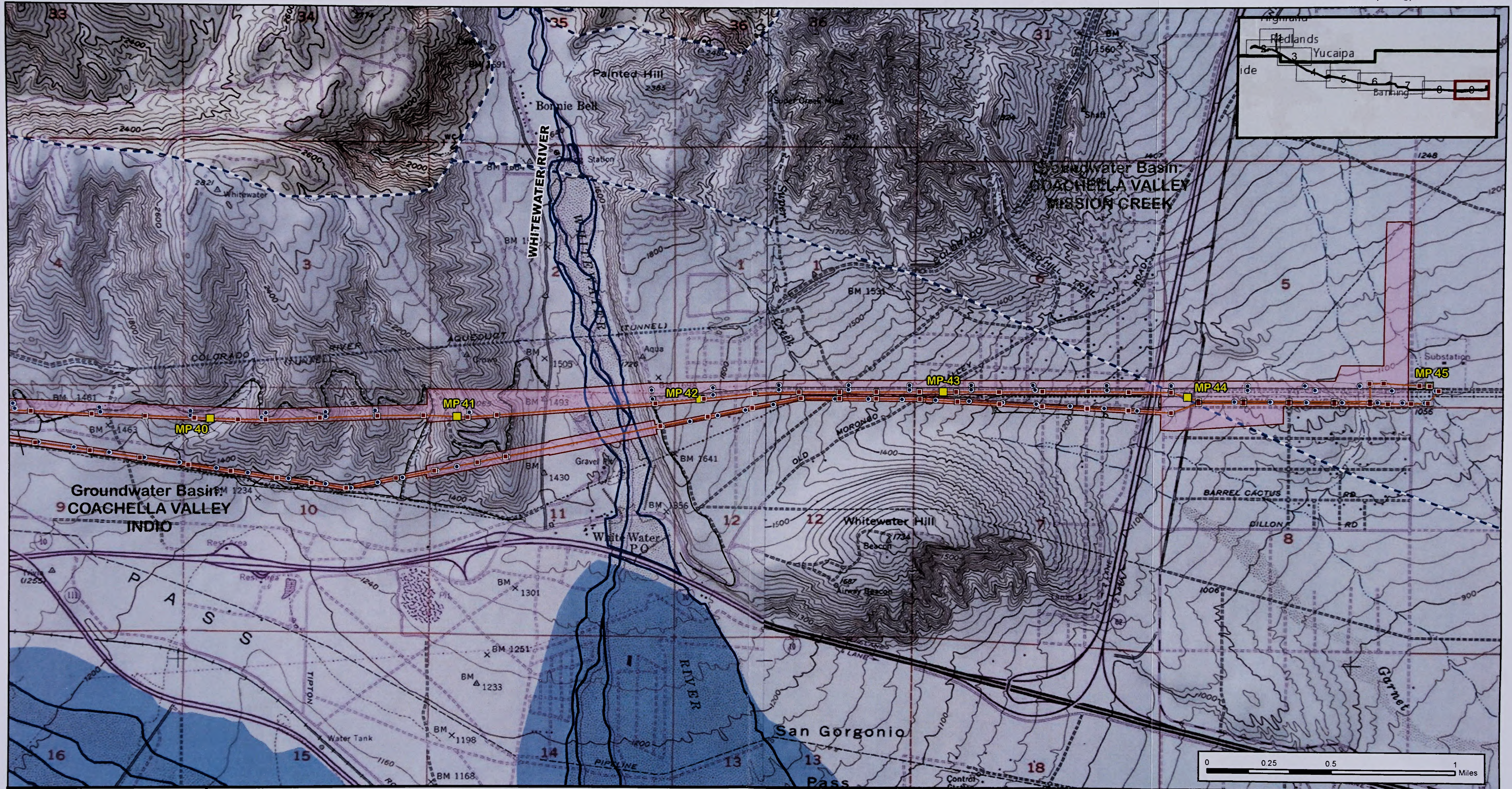
Legend

Mileposts (e.g., MP 1, SB-3)	Access Roads
Proposed 220 kV Structures	Proposed Transmission Line
Existing 220 kV Structures to be Removed	Streams
Transmission Line ROW	FEMA 100-Yr. Flood Zone
Groundwater Basins	

West of Devers Upgrade Project

Figure D.19-1h

Hydrologic Features: Groundwater Basins, Floodplains, and Streams



Sources: SCE 2013,
CA Bulletin 118,
CA Dept. of Cons.

1:24,000

Legend

- Mileposts (e.g., MP 1, SB-3)
- Proposed 220 kV Structures
- Existing 220 kV Structures to be Removed
- Access Roads
- Proposed Transmission Line
- Streams
- Transmission Line ROW
- FEMA 100-Yr. Flood Zone
- Groundwater Basins

West of Devers Upgrade Project

Figure D.19-1i

Hydrologic Features: Groundwater Basins, Floodplains, and Streams

D.20 Wildland Fire

This section describes the affected environment for Wildland Fire in Section D.20.1 and presents the relevant regulations and standards in Section D.20.2. Sections D.20.3 through D.20.5 describe the impacts of the Proposed Project and the alternatives. Section D.20.6 presents the mitigation measures and mitigation monitoring requirements, and D.20.7 lists references cited.

Development in and adjacent to fire-prone landscapes creates a major public safety risk throughout the Southwest and no more so than in southern California. Any fire in wildlands can become a conflagration during California's long, hot, dry fire season, when climatic conditions can enhance the potential for fires to ignite and spread. Primary concerns with regard to the risk of wildland fire include weather conditions (temperature, humidity, and wind), the presence and condition of fuels (vegetation), and potential fire ignition sources. The area between El Casco and Devers Substations is an area of high wind potential, as evidenced by the numerous wind turbine arrays located in the San Gorgonio Pass area east of Banning, and high winds can fan and accelerate any wildfire ignitions. However, weather is beyond human control. In contrast, fuel and ignition sources can be addressed through vegetation management, fire prevention practices, planning, and education.

During transmission line construction, certain work activities have the potential to create situations that could ignite fires. Examples include ignition from sparks created by welding or metal objects striking stones landing in dry vegetation, and vehicles parking in dry grass such that hot parts of the undercarriage could ignite the vegetation. After construction is completed and the transmission line is operating, fire ignition concerns center on potential equipment failures or routine operation and maintenance activities that could ignite flammable material.

The presence of a transmission line can hinder initial attack and containment in the event of a fire in the vicinity of the line. The presence of structures and conductors can pose risks to firefighters, both on the ground and in the air. Where overhead power lines are present, aerial and ground attacks are restricted. Aerial operations are complicated by the risk of aircraft and/or water buckets colliding with structures or conductors during smoky, reduced-visibility conditions. Conditions are especially hazardous when transmission lines are placed on ridge tops, reducing the proximity of fire retardant and water drop deliveries that aerial firefighting crews can achieve safely. For these reasons, pilots are kept apprised of the location of transmission lines. Firefighters on the ground can be put at risk if charged particles in heavy smoke create a short circuit or arc between an energized line and the earth, a person, or firefighting equipment. For this reason, firefighting protocols require crews to maintain certain distances from energized lines. Fire managers coordinate with utilities on shutting down lines as needed. Access roads to structures can also provide fire crews access to the area and be used as potential fire breaks.

Wildfires can affect transmission line integrity and transmission system reliability if they damage equipment or require line de-energization. However, the height of vegetation is managed beneath high-voltage transmission lines so as to reduce fuel load and ensure that lines do not make contact with vegetation. If ignited, the vegetative fuel in a managed ROW would burn quickly and relatively low to the ground and is unlikely to generate sufficient heat or flames to damage lines, which are high above the ground, or structures, which are steel and have a mandatory cleared area around them. During wildfire events, lines may be de-energized as a safety precaution, temporarily taking the line out of service and requiring other parts of the power grid to pick up the load. A widespread fire could cause multiple lines to be de-energized, resulting in power shortages.

Electric lines have been implicated in igniting fires. Electrical arcing from power lines can represent a fire ignition hazard. This phenomenon is more prevalent for lower voltage distribution lines, which typically are on wooden pole structures and in closer proximity to trees and other vegetation. Fire protection agency statistics show that more fires start from distribution lines rather than from transmission lines (CAL FIRE, 2008). Downed distribution lines that land on non-conducting surfaces may remain energized, creating a fire and life-safety hazard (Marino, 2014).

Fire hazards posed by high-voltage transmission lines are greatly reduced by the use of taller support structures made of steel and placed in wider ROWs, and by managing vegetation under the lines where there is a risk of conductors coming into contact with trees. The risk of a fire igniting due to a conductor falling from an overhead line is minimal due to additional system protection features designed to safeguard the public and line equipment. These systems consist of transmission line relays and circuit breakers that rapidly detect faults and cut-off power to avoid shock and fire hazards. This equipment is typically set to operate in 2 to 3 cycles, representing a time interval range from 2/60 of a second to 3/60 of a second. Unlike distribution lines, transmission lines do not have transformers or other electrical equipment mounted on poles. These types of distribution equipment, including the wooden cross arms supporting distribution lines, may fail, resulting in sparks or arcing that could ignite a fire.

While it is rare that a high-voltage transmission line ignites a fire directly, there are situations where lines have been associated with fires. For example, in August 2013, a "bouquet" of metallic balloons became entangled in a 500 kV transmission line in Tehama County (Wolff, 2013). The blowing balloons and string created a circuit between two of the transmission line conductors, igniting the balloons' nylon string, which fell into nearby grass and starting the 11,429-acre Deer Fire (Wolff, 2013).

SCE has identified two fire incidents in the WOD project area that were related to, but not caused directly by, its facilities. In 2009, an 85-acre brush fire near the intersection of Moreno Valley Freeway (Highway 60) and Jack Rabbit Trail is believed to have started at the base of a steel H-frame structure. It is speculated that a bird may have faulted the line, possibly starting the fire. No structures were damaged or injuries reported. In 2012, a 50-acre wildfire (the Bluff 2 Fire) near Bluff Road and Dillon Road in Banning resulted from vandals cutting down copper conductor in several spans on a 12 kV distribution circuit. Beyond damage to SCE facilities, no structures were damaged or injuries reported (SCE, 2014).

D.20.1 Environmental Setting / Affected Environment

D.20.1.1 Regional Setting and Approach to Data Collection

The ROW for the Proposed Project passes through urban, suburban, and rural landscapes. The wildland/urban interface is of particular concern for wildfire, where there can be an increased risk of ignitions and where fires can pose an increased risk to structures. The project ROW contains existing 220 kV power lines. (A section of the existing ROW on Morongo Tribal lands is proposed to be abandoned and replaced by ROW nearer Interstate 10, and an existing wood-pole mounted line would be removed and the line underbuilt on the new structures in the relocated ROW.) Overall, the Proposed Project would replace single-circuit 200 kV transmission lines with double-circuit lines of similar voltage. The structures supporting the new lines would be taller than the existing structures.

Fire management and protection responsibility on and near the ROW is allotted to different jurisdictions. In the project area there are three levels of jurisdiction: Federal/Tribal (on Federal and tribal land), State (on State and most unincorporated county land), and local (on incorporated [municipal] land and some unincorporated county land). While individual fire agencies have primary responsibility for specific geographic areas, under interagency cooperative and mutual aid agreements, fire agencies throughout the region aid each other as needed. Typically, when a wildland fire is reported, the nearest available firefighting units are dispatched, as it is not always immediately clear which wildland parcels are involved and which agency has jurisdiction.

Wildland fire suppression operations are complex and expensive. Fire suppression in the wildland-urban interface typically involves a multi-agency firefighting response that involves hundreds of firefighters participating in coordinated air and ground operations. During the fire season, the availability and response time for these resources may vary according to the number of other emergencies in the area and the availability of volunteer firefighters.

Helicopters and airplanes are often the fastest resources available to reach a wildfire. Almost anywhere in California, a firefighting aircraft can reach a wildfire within 20 minutes, depending on wind conditions that can ground aircraft if too strong (CAL FIRE, 2012). It can take an hour or more for fire engines to reach a wildland fire, especially in remote areas. Aerial attacks principally work in conjunction with firefighters on the ground. Aerial firefighting attacks are effective during initial attacks for extinguishing small fires and protecting homes. On large fires, aerial attacks are used for specific tactical suppression objectives such as reinforcing an established fire line. Identifying and extinguishing spot fires outside the fire line is another critical job done by aircraft.

In San Bernardino County, fire protection and suppression on all of the lands through which the Proposed Project passes are the responsibility of the respective incorporated cities, with the exception of a small unincorporated area in the vicinity of Reche Canyon Road and Prado Lane, between Colton and Loma Linda, which is a State responsibility area. Much of the area is urbanized, but wildland conditions are found near the county line, in south Loma Linda and south Redlands, and on unincorporated land.

In Riverside County, wildland conditions occur on unincorporated lands on the south side of San Timoteo Canyon. The area from the county line south to Calimesa and Beaumont is a State responsibility area for fire protection. East of San Timoteo Canyon Road, the alignment enters Beaumont, Calimesa, and Banning, where fire response and management are a local responsibility. East of Banning, the route passes through a checkerboard of tribal, BLM, and unincorporated Riverside County lands, which are areas of tribal, Federal, and State responsibility, respectively.

Information has been developed by CAL FIRE for both fire protection responsibilities by jurisdiction and for fire hazard severity zone designations. CAL FIRE maps indicate where fire suppression is a local, state, or federal responsibility. The agency also maintains maps that depict the estimated fire hazard severity (CAL FIRE 2007a, 2007b, 2008b, 2009). Responsibility information for the study area is displayed in Figure D.20-1. Fire hazard severity zone information is displayed in Figure D.20-2. The statewide model used by CAL FIRE to determine hazard severity is based on vegetation, topography, weather, crown fire potential, ember production and movement, and, based on past history, the likelihood of an area burning over a 30- to 50-year period.

Recent fires that occurred within 0.25 miles or less of the ROW include the Indian (2005), Locust (2003), Painted Hills (2005), San Tim (2011), San Timoteo (2005), and Woodhouse (2005) fires. While the CAL FIRE model estimates the likelihood of an area burning over a 30- to 50-year period, the actual potential for a fire can vary based on changes in the vicinity. The likely fire return interval within or adjacent to the ROW in Segments 2, 3, and part of 4 (described below) is once every 2 to 3 years, based on six fires having occurred in the past 10 years. The native vegetation mosaic in these segments has been severely altered and converted from chaparral and oak woodlands to perennial grasses. This, in conjunction with the fire history of the wildland segments, suggests the likely frequency of a fire burning through or adjacent to the ROW in these segments is fairly high. Grass fires have a very rapid rate of spread, produce large volumes of embers carried by the wind (that can ignite structures and cause downwind spot fires), and require effective ground and aerial initial attack to suppress. Beyond soot deposition, which could cause electric arching, these fires pose little threat to the transmission structures and conductors.

Analogous to flood zone maps, the fire hazard severity zone maps indicate the level of hazard. In the case of the FHSZ maps, the maps identify the likelihood that an area will burn over a 30- to 50-year period without considering modifications that may occur, such as through fuel reduction efforts or other changes in the fuel regime (CAL FIRE, 2007c). Risk is not indicated by the maps. Risk is the potential damage that can be done by a fire, based on existing conditions. Risk can be reduced by various strategies, such as creation of defensible space, fuel load reduction, and, in the case of structures, the use of sprinklers and ignition-resistant building materials and construction. As discussed below in Section D.20.1.2, standards have been developed regarding the management of vegetation under and around conductors and structures to reduce risk.

Responsibility areas along the transmission corridor fall into one of the following designations:

- Very High Fire Hazard Severity Zone (Very High FHSZ)
- High Fire Hazard Severity Zone (High FHSZ)
- Moderate Fire Hazard Severity Zone (Moderate FHSZ)
- Non–Very High Fire Hazard Severity Zone (Non-Very High FFSZ)
- Undesignated, or non-wildlands, which may include urban and agricultural uses

In areas of State responsibility, CAL FIRE uses three levels of FHSZ designation: Very High, High, and Moderate. The fire hazard severity zone classification is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.

For areas of local responsibility, CAL FIRE uses two FHSZ designations: Very High or Non-Very High (the High and Moderate FHSZ designations are not used). The local responsibility area FHSZ rating reflects flame and ember intrusion from adjacent wildlands and from flammable vegetation found in the urban area (CAL FIRE, 2007c). CAL FIRE has designated FHSZs on federal or tribal lands as either Very High FHSZ or Non-Very High FHSZ, similar to the system used for local jurisdiction areas. In portions of the project that are located on federal or tribal lands, responsibility for fire rests with BLM and the Morongo Fire Department for Morongo, respectively.

Figure D.20-1 shows local, State, and federal/tribal responsibility areas (CAL FIRE, 2014a). Figure D.20-2 shows the fire hazard severity zone designations for the study area (CAL FIRE, 2014b).

As shown in Figure D.20-3, over the past 50 years much of the wildlands in the region has burned, with many areas burning over more than once during this period. Figure D.20-3 also shows a subset of the 50-year fire history: the extent of major wildfire's that have occurred in the project vicinity in the past 10 years (CAL FIRE, 2014c).

D.20.1.2 Environmental Setting by Segment

The environmental setting with regard to wildland fire is described below, by project segment.

D.20.1.2.1 Segment 1: San Bernardino

The lands from San Bernardino Substation (MP SB-0) in Redlands south through Loma Linda (to approximately MP SB2.5) are considered by CAL FIRE to be a Non-Very High FHSZ. This area is heavily developed. Residential properties near the interface with wildlands in the southern part of Loma Linda and the wildlands around the San Bernardino Junction (MP SB-3.2) are considered a Very High FHSZ. Vegetation on the land south of Beaumont Avenue in Loma Linda is grass/shrub with some scattered trees in ravines. Fire suppression for all of Segment 1 is a local responsibility.

D.20.1.2.2 Segment 2: Colton and Loma Linda

Vista Substation (MP 0) and the immediate area around it are considered a Non-Very High FHSZ. From Interstate 215 east and south to San Bernardino Junction (MP 5), the entire ROW is considered by CAL FIRE to be a Very High FHSZ. The vegetation in the ROW and in the surrounding undeveloped areas is characterized as grass/shrub, with widely scattered oaks. Fire suppression for this area is a local responsibility, with the exception of two small unincorporated areas in the vicinity of Reche Canyon Road and Prado Lane, which are a State responsibility.

D.20.1.2.3 Segment 3: San Timoteo Canyon

From San Bernardino Junction (MP 5) south to the county line, the area is a Very High FHSZ, with fire suppression a local responsibility. Crossing into Riverside County (near MP 8.8), the ROW passes through a mix of lands designated as Very High FHSZ and Moderate FHSZ. The vegetation in this open landscape is grass/shrub, with widely scattered oaks. South of the San Bernardino/Riverside county line to El Casco Substation is a State responsibility area.

D.20.1.2.4 Segment 4: Beaumont and Banning

East of El Casco Substation, the project crosses into Calimesa and Beaumont (MP 16). CAL FIRE considers this portion of the route a Non-Very High FHSZ. In Banning, most of the route remains Non-Very High FHSZ; however, approximately 2 miles of the route (between Mountain and Sunset Avenues and again between Moore and Bluff Streets) passes through areas designated as Very High FHSZ. Vegetation in Segment 4 is primarily grass/shrub land in Beaumont with maintained landscaped ROW in some residential developments. In Banning, the vegetation is grassland. Fire suppression throughout Segment 4 is a local responsibility.

D.20.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

From Bluff Street in Banning through Morongo Tribal lands, CAL FIRE designates the land as Very High FHSZ or Non-Very High FHSZ. The vegetation cover on the land is characterized as a mix of grassland and shrub land. Fire responsibility through this segment rests with the Morongo Fire Department or CAL FIRE, depending on who has jurisdiction on specific land parcels.

D.20.1.2.6 Segment 6: Whitewater and Devers

From east of the Morongo lands to near Whitewater Canyon, CAL FIRE identifies the route as Moderate FHSZ. From near Whitewater Canyon to the Devers Substation the area is considered Non-Very High FHSZ. The vegetation cover throughout this segment is a mix of grassland and shrub land. Fire responsibility through this segment is shared by the BLM, CAL FIRE, and local authorities, depending on specific land parcel jurisdiction.

D.20.1.3 Environmental Setting for Connected Actions

The behavior and characteristics of wildfires depend on a number of factors. These include fuels (which vary in composition, cover, and moisture content), weather conditions (particularly wind speed and humidity), topography (slope and aspect), and ignition sources (such as lightning, arson, smoking, campfires, and power lines) as well as management practices (wildfire prevention and suppression efforts).

Vegetation with low moisture content is more susceptible to ignitions and burns more readily than vegetation with higher moisture content. Grasses tend to ignite more easily and burn faster and for a shorter duration than woody vegetation such as shrubs and trees. Dense vegetation tends to carry a fire farther than patchy vegetation. The presence of invasive annual grasses, however, can provide fuel connectivity in patchy desert shrublands that would otherwise provide inconsistent fuel for a wildland fire. High winds can blow glowing embers off burning vegetation to areas far ahead of the front of a fire, allowing fires to jump fuelbreaks. Low relative humidity conditions will dry out fuels, increasing the likelihood of ignition. Finally, steep slopes and slopes exposed to wind will carry fires rapidly uphill.

Fire Hazard Severity Zones (FHSZ) are areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors that have been mapped by the California Department of Forestry and Fire Protection (CAL FIRE) in accordance with Public Resources Code (PRC) 4201-4204 and Government Code 51175-89. FHSZs are ranked from moderate to very high and are categorized for fire protection as within a Federal Responsibility Area (FRA) under the jurisdiction of a federal agency, within a State Responsibility Area (SRA) under the jurisdiction of CAL FIRE, or within a Local Responsibility Area (LRA) under the jurisdiction of a local agency.

The seven generation facilities identified as actions connected to the WOD project are located in eastern Riverside County, in the vicinity of Desert Center and Blythe. The environmental settings for these connected actions with respect to wildland fire are described below.

Desert Center Area. The 4 connected action projects in vicinity of Desert Center would be in open desert, characterized by sparse vegetation and limited development. The small communities of Desert Center and Lake Tamarisk are located on and just north of I-10, respectively. Topography in the area is nearly level to gently sloping. As identified in the Final EIS for the Desert Harvest Solar Project, the area of Riverside County has been determined to have a low to moderate susceptibility to wildfire.

The area is primarily within a FRA under the jurisdiction of the BLM, and is within a moderate FHSZ. BLM is responsible for the suppression, fuels, and prevention/mitigation/education in this area. Some areas are located within a state responsibility area. The nearest high FHSZ is east of Joshua Tree National Park (JTNP), about 35 miles from the Desert Center area.

The fire station in the area is the Lake Tamarisk Fire Station in Desert Center. Approximately 50 to 60 miles to the east are the Blythe Air Base and Riverbend Volunteer Fire Departments, both in Blythe. Approximately 55 to 60 miles to the west are La Quinta South Fire Station, Coachella Fire Station, and Sun City Shadow Hills, Indio, North Indio, and West Indio Fire Stations in Indio.

In summary, fire risk in the area is moderate, and the potential for a major fire to occur in the area surrounding the area is moderate.

Blythe Area. In the Blythe area, connected actions are three solar projects that would interconnect with the grid at Colorado Rivers Substation. The desert west of Blythe is rated as a moderate fire hazard severity zone. Fire suppression in this area would be a federal or county responsibility, depending on jurisdiction. Blyth itself and its environs are not rated by CALFIRE; fire suppression here is a local (county or city) responsibility.

The City of Blythe Volunteer Fire Department and the Riverside County Fire Department (RCFD)/California Department of Forestry would provide fire protection to the solar project. The project would fall within the RCFD's East Desert Division, which encompasses the lower Coachella Valley, east to the Arizona state line. RCFD services include municipal and wildland fire protection and prevention services, pre-hospital emergency medical services including paramedics, hazardous materials response, and technical rescue services. The nearest fire stations are the Blythe, Ripley, Blythe Air Base, River Bend, and Lake Tamarisk fire stations. All stations are dispatched by CALFIRE Riverside Unit/RCFD Emergency Command Center under the integrated Fire Protection System.

The natural fire risk in the area is moderate, based on vegetation, climate, and topography.

D.20.2 Applicable Regulations, Plans, and Standards

D.20.2.1 Federal

Clearance Requirements for Transmission Lines. A variety of line and tower clearance standards are used throughout the electric transmission industry. In California, the CPUC has adopted its General Order 95 (GO 95, discussed in Section D.20.2.2 below) rather than the National Electric Safety Code (NESC) as the key electric safety standard for the state. Nationally, most transmission line owners follow the NESC rules or American National Standards Institute (ANSI) guidelines, or both, when managing vegetation around transmission system equipment. The NESC deals with electric safety rules, including transmission wire clearance standards, whereas the applicable ANSI code deals with the practice of pruning and removal of vegetation. The following standards, guidelines, rules and regulations identify requirements and suggested practices for vegetation management in transmission line corridors.

- ***National Electric Safety Code.*** The NESC is a national code covering a variety of basic provisions regarding electric supply stations, overhead electric supply and communication lines, and underground electric supply and communication lines. It contains work rules for construction, maintenance, and operation of electric supply and communication lines and equipment. The NESC is be adopted by individual states. The State of California has adopted its own standard (GO 95) governing overhead transmission lines in the State.

- ***North American Electric Reliability Council Standards.*** NERC is a nonprofit corporation whose members are ten regional reliability councils. NERC's function is to maintain and improve the reliability of the North American integrated electric transmission system, including preventing outages from vegetation located on transmission ROWs, minimizing outages from vegetation located adjacent to ROWs, and maintaining clearances between transmission lines and vegetation on and along transmission ROWs. Standard FAC-003-1, Transmission Vegetation Management Program, applies to all transmission lines operated at 200 kV and above and to any lower voltage lines considered critical to the reliability of the electric system in the region. (In March 2013, the Federal Energy Regulatory Commission (FERC) issued its Final Rule, Order No. 777, approving an updated NERC Reliability Standard, FAC-003-2, expanding the applicability of FAC-003-1 to include overhead transmissions operated below 200 kV.) The transmission owner must prepare, and keep current, a formal transmission vegetation management program (TVMP). The TVMP must identify and document clearances between vegetation and overhead, ungrounded supply conductors, taking into consideration transmission line voltage, the effects of ambient temperatures on conductor sag under maximum design loading, and the effects of wind velocities on conductor sway. Minimum clearance distances must be no less than those set forth in IEEE Standard 516-2003 (now superseded by Standard 516-2009).

- ***Institute of Electrical and Electronics Engineers (IEEE) Standard 516-2009.*** The Institute of Electrical and Electronics Engineers (IEEE) is a leading authority in setting standards for the electric power industry. Standard 516-2009, Guide for Maintenance Methods on Energized Power Lines, provides minimum vegetation-to-conductor clearances to maintain electrical transmission safety.

Title 14 CFR 91.137, Temporary Flight Restrictions in the Vicinity of Disaster/Hazard Areas. This regulation allows the Federal Aviation Agency (FAA) to temporarily restrict flights in disaster or hazard areas, which includes areas where a wildfire is burning. The restriction is intended to protect persons and property on the surface or in the air for an existing or imminent hazard, to provide a safe environment for the operation of disaster relief aircraft, and to prevent unsafe congestion from sightseeing and other aircraft above an incident that may generate a high degree of public interest.

14 CFR 91.137 allows an administrator to issue a Notice to Airmen (NOTAM) designating an area within which temporary flight restrictions (TFR) apply. When a NOTAM is issued, no person may operate an aircraft within the designated area unless that aircraft is participating in the hazard relief activities and is being operated under the direction of the official in charge of on-scene emergency response activities.

D.20.2.2 State

CPUC General Order 95: Rules for Overhead Electric Line Construction. CPUC's GO 95 is the key standard governing the design, construction, operation, and maintenance of overhead electric lines in the State. GO 95 safety standards for overhead electric lines include minimum distances for conductor spacing, minimum conductor ground clearance, standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements.

GO 95 Rule 35 governs tree trimming requirements, including minimum vegetation clearances around power lines in extreme and very high fire threat zones in Southern California. The rule requires that these clearances be:

- 4 feet radial distance for any conductor of a line operating between 7.5 kV and 22.5 kV
- 6 feet radial clearances for any conductor of a line operating between 22.5 kV and 300 kV

GO 95 Rule 31.2 requires that lines be inspected frequently and thoroughly for the purpose of insuring that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition as not to create a hazard.

Public Resources Code (PRC) 4292 (Powerline Hazard Reduction). PRC 4292 requires a 10-foot area in each direction around the outer circumference of any power pole or tower carrying more than 750 volts to be clear of tree branches or ground vegetation. The director or the agency that has primary fire protection responsibility for the protection of such areas may permit exceptions from the requirements of this section, which are based upon the specific circumstances involved.

PRC 4293 (Powerline Clearance Required). Similar to CPUC GO 95, PRC 4293 presents requirements for line clearance including a minimum of:

- 4 feet of vegetation clearance from any conductor (line) operating at 2.4 or more kV but less than 72 kV
- 6 feet of vegetation clearance from any conductor (line) operating at 72 or more kV but less than 110 kV
- 10 feet of vegetation clearance from any conductor (line) operating at 110 kV or higher.

Dead trees, old decadent or rotten trees, trees weakened by decay or disease, and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard.

California Code of Regulations (CCR) Title 14, Article 4, Section 1254 (Minimum Clearances – PRC 4292). CCR 14 Section 1254 identifies minimum clearance requirements on non-exempt utility poles. The minimum clearance provision of PRC 4292 are not required around poles and towers where all conductors are continuous over or through a pole or tower, or where conductors are of a specified design and properly manufactured and installed, or in certain types of agricultural land, or where vegetation is less than 12 inches in height and is fire resistant and planted and maintained to prevent soil erosion and fire ignition. The proposed Project structures would be primarily exempted from the clearance requirements of the CCR section.

The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of 14, CCR, 1255 or PRC 4296. The radius of the cylindroid is 3.1 m (10 feet) measured horizontally from the outer circumference of the specified pole or tower with height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid with the ground to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:

- At ground level – remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will propagate fire
- From 0 to 2.4 m (0 to 8 feet) above ground level – remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 m (8 feet).
- From 2.4 m (8 feet) to horizontal plane of highest point of conductor attachment – remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety.

California Code of Regulations (CCR) Title 14, Article 4, Section 1256 (Minimum Clearances – PRC 4293). CCR 14 Section 1256 identifies minimum clearance requirements to be maintained between conductors and their surroundings. Minimum clearances required by PRC 4293 are to be maintained within the specified radius around the conductor. Minimum clearance includes any position through which the conductor may move and any position through which the vegetation may sway. This accounts for the dynamic movement of both conductors and vegetation.

Power Line Fire Prevention Field Guide 2008 Edition. CAL FIRE, the state's three investor owned utilities (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric), and other California electric utilities have mutually developed a comprehensive field guide for their personnel. Its purpose is "to provide information and guidance to the personnel of the fire service agencies and electrical operators for minimum uniform application within the areas of their respective jurisdiction and franchise responsibilities." In addition to safety of the public, the guide details fire hazard reduction maintenance procedures for the safety of conductors and certain hardware.

D.20.2.3 Local

The CPUC has jurisdiction over the siting and design of the Proposed Project. Although exempt from local land use and zoning regulations, GO 131-D, Section III.C requires "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits."

Local plans, regulations, and standards vary somewhat by specific jurisdictions. Below are plans, policies, and programs that jurisdictions have developed with regard to hazards, and specifically with regard to fire.

County of San Bernardino General Plan, Safety Element. *Goal S 1:* The County will minimize the potential risks resulting from exposure of County residents to natural and man-made hazards in the following priority: loss of life or injury, damage to property, litigation, excessive maintenance and other social and economic costs.

> ***Policy S 3.2:*** The County will endeavor to prevent wildfires and continue to provide public safety from wildfire hazards.

County of San Bernardino General Plan, Land Use Element. ***Policy LU 7.2:*** Enact and enforce regulations that will limit development in environmentally sensitive areas, such as those adjacent to river or streamside areas, and hazardous areas, such as floodplains, steep slopes, high fire risk areas, and geologically hazardous areas.

County of Riverside General Plan, Safety Element. ***Policy S 5.10:*** Continue to utilize the Riverside County Fire Protection Master Plan as the base document to implement the goals and objectives of the Safety Element.

City of Banning General Plan, Emergency Preparedness Element. ***Policy 6:*** The City shall thoroughly consider and assess vulnerability to natural and manmade disasters or emergencies when reviewing proposals for the siting and development of critical and essential public/quasi-public facilities.

> ***Program 6.A:*** In order to assure the maximum possible protection from environmental and manmade hazards, including earthquakes and flooding, the City shall consider their vulnerability to natural and manmade disasters and emergencies when reviewing proposals for critical and essential facilities, as well as sensitive land uses.

City of Banning General Plan, Wildland Fire Hazards Element. ***Goal:*** Protect human life, land, and property from the effects of wildland fire hazards.

> ***Policy 1:*** The City shall establish and maintain an information database containing maps and other information which describe fire hazard severity zones, fire threat zone, and other wildfire hazards occurring within the City boundaries, sphere-of-influence and planning area.

> ***Program 3.A:*** New and substantially remodeled structures or developments shall incorporate wildfire prevention design techniques, such as the use of "defensible space," fire retardant sidings, optimal site planning and building orientation, landscaping orientation, and other design approaches to reduce wildfire hazards.

City of Beaumont General Plan, Safety Element. ***Policy 20:*** The City of Beaumont will continue to provide technical and policy information regarding structural and wild land fire hazards to developers, interested parties and the general public through all available media.

City of Calimesa General Plan, Safety Element. ***Goal 4:*** Reduce threats to public safety and protect property from wildland and urban fire hazards.

City of Palm Springs General Plan, Safety Element. ***Goal SA4:*** Protect the lives and property of residents, business owners, and visitors from the hazards of urban and wildland fires.

> ***Policy SA4.2*** Support brush removal and weed abatement in developed areas to minimize fire risk, and coordinate with the Riverside County Fire Department Hazard Reduction Office regarding jurisdictional issues relating to brush removal.

City of San Bernardino General Plan, Safety Element. ***Goal 10.11:*** Protect people and property from urban and wildland fire hazards.

City of Yucaipa General Plan, Safety and Hazardous Waste Element. ***Goal S1:*** Minimize the potential risks resulting from the exposure of City residents to man-made and natural hazards with the following priorities: loss of life or injury, damage to property, litigation, excessive maintenance, and other social and economic costs.

Policy C: Inform and educate the public of the risks from natural and man-made hazards, of methods available for hazard abatement, prevention, mitigation and avoidance, and of procedures to follow during emergencies.

Policy Y: Because rapid urban development has resulted in potential fire hazards in wildland/urban intermix areas County-wide, the City shall implement the following actions:

Actions: Apply the regulations of the "Greenbelt" Fire Safety Overlay Ordinance as found in the Development Code to all City areas subject to wildland/urban intermix fire hazards.

D.20.3 Environmental Impacts of the Proposed Project

D.20.3.1 Approach to Impact Assessment

Risk of fire can occur during both construction and operation of a transmission line and its associated facilities. The degree of risk depends on local conditions, such as weather, the type and condition of vegetation, and safety procedures in place. Construction involves numerous personnel, a wide range of work activities, and use of a variety of types of equipment along the ROW, at substations, and at construction yards. During construction, concerns center on worksite preparation to reduce the availability of fuel and the implementation of appropriate procedures to eliminate or manage potential ignition sources. Operations and maintenance involve considerably fewer personnel, limited activities, and much less equipment on the ROW and at substations that during construction. During ongoing operations and maintenance, concerns center on ensuring fuel (vegetation), ground surfaces, and equipment are maintained according to applicable standards and that fire safety requirements and procedures are implemented.

In assessing impacts during construction, consideration is given to existing conditions, including vegetation and existing transmission lines and equipment, and how those may be altered as a result of implementing the Proposed Project. Consideration also is given to the fire-safety related procedures and practices that would apply during construction. In assessing impacts during operations and maintenance, consideration is given to on-going vegetation management and equipment maintenance and safety practices, procedures, and training.

D.20.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures related to wildland fire.

D.20.3.2 Impact Criteria

The following questions related to wildland fire hazards are addressed in this EIS by considering the following evaluation criteria, which are based on the nature of the Proposed Project and the existing environment:

a) Would the project "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?"

b) Would project activities required during construction or maintenance increase the probability of a wildland fire, resulting in damaging impacts to communities, firefighter health and safety, and/or natural resources?

c) Would the presence of the overhead transmission lines increase the probability of a wildland fire, resulting in damaging impacts to communities, firefighter health and safety, and/or natural resources?

d) Would the presence of the project create obstructions or impediments to fire suppression efforts, resulting in damaging impacts to communities and/or natural resources?

e) Would activities associated with project construction or maintenance result in a vegetation mix that could increase ignition potential and rate of fire spread?

The criteria used to evaluate these questions are (1) the degree to which the existing situation in the ROW with regard to wildland fire risk and fire suppression would be changed by implementation of the Proposed Project and (2) whether such a change is meaningful.

Fire Prevention and Response during Transmission Line Construction. SCE's standard construction practices are intended to prevent fires during construction, as stated in SCE's Specification E-2005-104 Transmission Line Project Fire Plan (SCE, 2006), which would apply to the West of Devers project. SCE and/or contractor crews would "furnish all supervision, labor, tools, equipment and material necessary to prevent starting any fire, control spread of fires if started, and provide assistance for extinguishing fires started as a result of transmission line construction activities." As well, SCE and/or contractor crews would use every reasonable precaution against starting fires where the work is performed, in whole or in part, in an area covered with flammable dry grass, brush, and trees. Such precautions include, but are not be limited to, prohibiting smoking on the jobsite, use of spark arresters on equipment exhaust, and if necessary assigning a Fire Patrolperson whose sole responsibility would be to monitor the crews' fire prevention activities. The Fire Patrolperson would be equipped with radio or cell phone communication capability (SCE, 2006, page 1-2).

Construction crews would be required to have portable fire-fighting equipment, shovels, axes, and other necessary equipment at all sites where work is in progress, and with all crews in transit. In the event of any uncontrolled fire near the project, and as requested by SCE's Construction Representative, SCE and/or contractor crews would furnish any and all of its forces and equipment to extinguish the fire as directed by federal, State, or county fire authorities (SCE, 2006).

Fire Prevention during Transmission Line Operation. Electrical arcing from power lines can pose a fire hazard. This phenomenon is more likely on lower voltage distribution lines, since these lines are typically on shorter structures and in closer proximity to trees and vegetation. Fire hazards from high-voltage transmission lines are greatly reduced through the use of taller structures made of steel and wider ROWs. Further, in high-voltage transmission line ROWs trees and tall shrubs are cleared or trimmed to control this hazard. The risk of a fire due to a fallen high-voltage conductor from an overhead line is minimal due to system protection features linked to the transmission line design.

These hazards are addressed in project design. SCE is required to design the transmission line in accordance with safety requirements of the CPUC's GO 95 and other applicable requirements.

D.20.3.3 Impacts and Mitigation Measures

Impact WF-1: Construction or maintenance activities would increase the probability of a wildland fire.

Wildland fires put firefighters, residents, workers, buildings, and natural resources at risk. Such fires can damage or destroy property and resources and result in personal injury or death. Any activity that increases the probability of a wildfire would be of major concern. Where the ROW, existing substations, or construction yards are located in or near wildlands, project-related activities at these locations have the potential to be an ignition source for a wildland fire.

Examples of ignition sources include sparks from welding or from metal striking metal or stone, which could ignite surrounding vegetation, parking vehicles over dry vegetation, where hot undercarriages could ignite grass or shrubs, and improperly discarded smoking materials.

SCE is required to design the transmission line in accordance with safety requirements of the CPUC's GO 95 and other applicable requirements, including maintenance of clear areas and prescribed distances between conductors and vegetation.

Mitigation Measure for Impact WF-1: Construction or maintenance activities would increase the probability of a wildfire.

WF-1a **Prepare and implement a Fire Management Plan.** A Project-specific fire prevention plan for both construction and operation of the project shall be prepared by SCE and submitted to for review prior to initiation of construction. The draft copy of this Plan is to be provided to each fire agency at least 90 days before the start of any construction activities in areas designated as Very High or High Fire Hazard Severity Zones. Plan reviewers shall include CPUC, BLM, CAL FIRE, San Bernardino and Riverside Counties, and local municipal fire agencies with jurisdiction over areas where the project is located. Comments on the Plan shall be provided by SCE to all other participants, and SCE shall resolve each comment in consultation with CAL FIRE, BLM, and the Morongo Fire Department, as appropriate. The final Plan shall be approved by these agencies at least 30 days prior to the initiation of construction activities. SCE shall fully implement the Plan during all construction and maintenance activities.

A project Fire Marshal or similar qualified position shall be established by SCE to enforce all provisions of the Fire Management Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. SCE shall monitor construction activities to ensure implementation and effectiveness of the plan.

The Plan shall include at a minimum SCE's Specification E-2005-104 (Transmission line Project Fire Plan), including any updates and amendments, and other requirements specified below.

The plan should recognize and prepare for the high probability that fast moving, wind driven wildfires will burn adjacent or through the Proposed Project with some regularity as the result of severe fire weather conditions, flash fuels such as provided by perennial grasslands, and abundant ignition sources. Wind driven fires can quickly overcome operational and maintenance crews, placing their health and safety at risk.

The Plan shall cover:

- The purpose and applicability of the plan;
- Responsibilities and duties;
- Preparedness training and drills;
- Procedures for fire reporting, response, and prevention that include
  - identification of daily site-specific risk conditions
  - the tools and equipment needed on vehicles and to be on hand at sites
  - reiteration of fire prevention and safety considerations during tailboard meetings
  - daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity,
- Coordination procedures with BLM and San Bernardino and Riverside County fire officials.
- Crew training, including fire safety practices and restrictions,
- Method for verification that Plan protocols and requirements are being followed.

VEG-1b Prepare and implement a Worker Environmental Awareness Program. (See Section D.4.3.3 (Biological Resources – Vegetation, Impacts and Mitigation Measures) for full text.)

Impact WF-2: The presence of overhead transmission lines would increase the probability of a wildland fire.

A live transmission line that arcs to vegetation is a potential ignition source for a fire. Electrical arcing from power lines can be caused by high-voltage surges and spikes and from such events as a line failure due to a tree fall, the toppling of a pole, or a line breaking during a storm.

Arcing that potentially could start a fire is more common with lower voltage distribution lines than with higher voltage lines. Lower voltage lines typically are on shorter structures and in closer proximity to trees and vegetation. Fire hazards from high-voltage transmission lines are reduced through the use of taller structures made of steel and wider ROWs, in which trees are cleared or trimmed to reduce this hazard.

System protection features are designed to minimize fire hazard due to a fallen conductor from an overhead high-voltage line, safeguarding the public and line equipment. These protection systems consist of transmission line relays and circuit breakers designed to rapidly detect faults and cut-off power to avoid shock and fire hazards. This equipment typically is set to operate in a time interval range from 2/60 to 3/60 of a second. The system is designed to de-energize the line, perform a test, and then lock the line out of service.

In addition, the three high-voltage conductors that comprise a circuit are spaced to prevent contact between the conductors in high wind conditions, and the entire line has lightning-strike protection installed overhead. High-voltage transmission lines towers and poles do not have installed on them equipment, such as pole transformers, that might fail. Such pole-mounted equipment normally is associated with distribution circuits.

SCE is required to design the transmission line in accordance with safety requirements of the CPUC's G.O. 95 and other applicable requirements.

Together, these factors make it highly unlikely that the 220 kV transmission line would pose a fire hazard through arcing or line failure. As well, the ROW currently has 220 kV circuits located in it and the Proposed Project would not add a significant new risk as compared to existing conditions.

No mitigation is required. With implementation of the project, conditions in the ROW with regard to wildland fire hazards would not change substantially from existing conditions. SCE would continue maintaining required vegetation clearances and SCE and fire agencies would continue to follow existing or any future procedures for managing wildland fire hazards.

Impact WF-3: The presence of the project would create new obstructions to fire suppression efforts.

The presence of the structures and conductors comprising the high-voltage transmission line poses a hazard to firefighters and affects how fires near the line would be managed and suppressed. The combination of dense smoke and hot gases generated by a large fire directly under or near a high-voltage transmission line can create a conductive path that increases the potential of a "flashover." A flashover is when electricity jumps across an air gap to create a conductive path. This may occur between wires or from wires to the ground (Powerlink, 2009). The hazard associated with fires near high-voltage lines is two-fold: ionized smoke and gases can provide a pathway for electricity to arc between an energized line and the ground, firefighters, or their equipment; and the presence of the transmission line in airspace used by firefighting aircraft poses a collision risk.

When a fire is not close to a power line, ground firefighting resources conduct fire suppression efforts as normal. If the fire is in closer proximity to a power line, firefighters are instructed to maintain a distance of 1.5 times the height of the structure away from the line, if it is energized. During wildland fire incidents, pilots are supplied with overhead hazard maps and are regularly briefed on the location of power lines in and around the areas where they are operating. SCE's Fire Management Team provides liaisons to all fire agencies within the SCE service territory. This includes wildland fire response, electrical safety training for first responders, hazard mitigation, and prescribed burn coordination. SCE and fire agencies coordinate on when it is necessary to de-energize a line.

Obstructions associated with the presence of the Proposed Project would be similar in nature to those associated with transmission lines currently in the ROW. The Proposed Project consists of the removal of single-circuit 220 kV lines and installation of double-circuit 220 kV lines in the existing ROW. Single circuits would be replaced with double circuits to increase transmission system capacity. Many existing structures would be removed and many of the new structures would be in positioned in different locations and would be somewhat taller than existing structures. The heights of individual structures vary along a transmission line, depending on their topographic locations and the length of the spans between structures. The existing 220 kV towers and poles range up to 174 feet high. The replacement structures would range up to 184 feet high for lattice steel towers and up to 200 feet high for tubular steel poles. Overall, the height difference between existing and proposed structures would be approximately 20 feet.

Based on the instruction to firefighters to keep 1.5 times the structure height away from transmission lines during a fire event, the Proposed Project pole and tower structures would require firefighters to remain approximately 300 feet (1.5 x 200 feet) from the line when it is energized line (as compared to approximately 276 feet now (1.5 x 184)). If the line is energized, a fire passing through the ROW would not be suppressed within this no-go zone. The changes in tower and pole height and location and the conductor spans between these structures would nominally increase the width of this no-go zone, but that increase does not constitute a significant change from what now exists in the ROW. Pilots engaged in fire suppression have been trained in their work and are aware of the hazards posed by transmission lines, the locations of which are provided to them.

The changes in the 220 kV lines in the ROW under the Proposed Project would not substantially alter the current approach to fire suppression in the vicinity of the ROW and would not create significant new obstructions as compared to existing conditions.

No mitigation is required. Structures and conductors affect how fires near them are suppressed and how close firefighters can get to the lines. However, the Proposed Project would result in constraints similar to those created by existing conditions in the ROW and at substations. With implementation of the project, tower and conductor heights in the ROW and safety distances from the transmission line would increase nominally. This would not create a significant change as compared to existing conditions. SCE and fire agencies would continue to follow existing procedures for conducting and managing wildfire suppression, including making firefighting crews and pilots aware of the location and energization status of lines.

Impact WF-4: Construction or maintenance activities would result in a vegetation fuel mix that increases ignition potential and rate of fire spread.

Disturbed ground is vulnerable to being colonized by invasive vegetation (weeds) that can be more fire prone than the vegetation that was present before the disturbance.

A non-vegetated buffer area is required to be maintained around transmission structures. For all lines operating above 110 kV, this buffer area extends 10 feet out from each footing on a lattice steel tower or from the base of a tubular steel pole. Conductors for transmission lines over 110 kV are required to have a radial distance of 10 feet from any vegetation they could contact. This requirement includes accounting for the sway of the conductor in windy conditions.

Given the height of the conductors above the ground and the distance between conductors and vegetation that are required to be maintained, if a fire were to pass under the transmission line it is unlikely to damage the line. Similarly, support structures are unlikely to be damaged by a fire. In addition, in wildland areas the vegetation along the ROW primarily is grasses and shrubs. When dry, this material would burn rapidly and would not create a sustained heat load sufficient to damage the transmission line.

However, if the vegetation mix is altered through the introduction of species that increase ignition potential and the rate of fire spread, this could increase the risk to any nearby structures or communities.

Mitigation Measure for Impact WF-4: Construction or maintenance activities would result in a vegetation fuel mix that increases ignition potential and rate of fire spread.

VEG-2a **Prepare and implement an Integrated Weed Management Plan.** (See Section D.4.3.3 (Biological Resources – Vegetation, Impacts and Mitigation Measures) for full text.)

D.20.3.4 Impacts of Connected Actions

To be viable, connection actions require implementation of the Proposed Project. These have been identified as occurring in the vicinity of Desert Center and Blythe. One project would be a solar trough project in the Desert Center area, the other 6 connected action projects would be solar projects in these 2 areas. Mirrors, solar arrays, and PV modules are largely fire resistant, being constructed primarily of steel, glass, and aluminum, with various other project components housed in steel structures. Thus, they are not vulnerable to firebrands from wildland fires. Interior roads within solar facilities provide access for fire trucks and also serve as breaks in vegetation, helping limit the spread of a fire. Of the 4 wildland fire impacts identified for the Proposed Project, 3 would apply as well to the connected actions. One impact, WF-2 (The presence of overhead transmission lines would increase the probability of a wildland fire), does not apply because the renewable energy projects would not require tall towers for gen-tie lines. Lines would be similar in height to subtransmission and distribution lines and would largely use existing corridors with other lines. The impact numbering below uses the same numbering as the Proposed Project.

Impact WF-1: Construction or maintenance activities would increase the probability of a wildland fire

Desert Center Area. Land in the Desert Center area has been determined to have a low to moderate susceptibility to wildfire. Construction of solar projects would increase the potential for a wildfire as a result of construction activities and ground disturbance. The risk of wildfire would be related to combustion of native plants caused by activities such as smoking, sparks, and operating vehicles and other equipment off paved roadways. A project-related fire could escape initial containment and pose a hazard to life and property for project personnel and nearby landowners.

Construction of solar projects could introduce non-native plants to the landscape. Because they dry out earlier in the season and can interconnect otherwise patchy native desert plants, non-native plants can increase a landscape's susceptibility to wildfire and increased fire frequency beyond what would be the case under natural conditions.

Activities during operation of solar facilities could increase the risk of wildland fire. The risk would be related to the combustion of vegetation caused by smoking and sparks or other ignition sources.

Future solar projects likely would be subject to similar mitigation measures that have been required at existing solar projects. These include implementing a weed management plan, developing a fire prevention plan, instituting worker training in fire prevention, installing fire detection and suppression systems, undergoing facility inspections by fire authorities, and providing 24-hour access to firefighting agencies.

Blythe Area. Vegetation in the Blythe area has a moderate susceptibility to wildfire. Construction activities would increase the potential for a wildfire as a result of ignition risks and ground disturbance. Activities such as smoking, welding, or parking vehicles over dry vegetation could ignite fires. A project-related fire could escape initial containment and pose a hazard to life and property for project personnel and nearby landowners.

Construction activities associated with solar projects could introduce non-native plants to the landscape. Because they dry out earlier in the season and can interconnect otherwise patchy native desert plants, non-native plants can increase a landscape's susceptibility to wildfire and increased fire frequency during both construction and subsequent operation of the facility.

However, in approving future solar projects, lead agencies are likely to impose similar mitigation measures to those required at existing solar projects. These include implementing a weed management plan, developing a fire prevention plan, instituting worker training in fire prevention, installing fire detection and suppression systems, undergoing facility inspections by fire authorities, and providing 24-hour access to firefighting agencies.

Impact WF-3: The presence of the project would create new obstructions to fire suppression efforts

Desert Center Area. Although land in the Desert Center area has a low to moderate susceptibility to wildfire, fences and gates restricting access to solar facility sites could impede fire-fighting efforts at the site or nearby, potentially increasing the area affected by a fire. Perimeter security fencing also would limit access to gates, and could require detouring around the site if a fire occurs beyond the facility. Within sites, the presence of tiers of solar arrays would limit the flexibility and mobility of fire fighters.

Structures associated with solar projects are relatively low to the ground. The towers and conductor spans of high-voltage transmission lines pose a physical and electrical hazard to fire fighters and fire suppression aircraft. In contrast, solar facilities would not pose similar hazards because of their lower profile.

It is expected that future solar projects would be subject to mitigation requirements regarding wildland fire similar to those required of existing projects. These include requirements to implement a weed management plan, develop a fire prevention plan, implement worker training in fire prevention, install fire detection and suppression systems, undergo facility inspections by fire authorities, and provide 24-hour access to firefighting agencies.

Blythe Area. As noted for the Desert Center area, development of solar facilities can create obstructions that could adversely affect fire suppression efforts. Such obstructions include fencing that limits access to a site or nearby lands and the presence of solar PV arrays that limit mobility within a site. Solar PV units are relatively low to the ground, so would not hamper aerial suppression of fires. Arrays themselves are fire-resistant because of the materials used in their manufacture.

Requirements similar to those imposed on existing projects are expected to be applied to new solar PV projects. These requirements include developing a fire prevention plan, implementing worker fire-safety training, installing fire detection and suppression systems, being subject to inspections by fire authorities, and providing 24-hour access to fire departments.

Impact WF-4: Construction or maintenance activities would result in a vegetation fuel mix that increases ignition potential and rate of fire spread

Desert Center Area. Construction and maintenance activities at solar projects could introduce or facilitate the spread of non-native plants in the landscape. Non-native plants dry out earlier in the season and can interconnect otherwise patchy native desert plants, increasing the landscape's susceptibility to wildfire and increasing fire frequency as compared to previous conditions. However, internal and perimeter roads at solar facilities create discontinuities in vegetative cover, helping to limit the spread of a fire should one occur. As well, vegetation in solar arrays is maintained so it will not interfere with operations or pose a fire risk.

This impact can be addressed by relying on mitigation measures such as those that have been applied to existing solar facilities. It is assumed that future solar projects would be required to adopt measures that include implementation of a weed management plan, implementation of worker training in fire prevention, installation of fire detection and suppression systems, inspections by fire agencies, and provision of 24-hour access to fire departments.

Blythe Area. The introduction of non-native plant material that could contribute to a vegetation fuel mix that would increase both the potential for fire ignitions and the rate of spread of fires could occur at facilities developed in the Blythe area. However, imposition of mitigation measures that have been previously applied to solar projects would address this risk. These measures include weed management programs, development of fire prevention plans, fire prevention training of staff, use of fire detection and suppression systems, regular inspections, and ensuring 24-hour access to fire departments.

D.20.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.20.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

The environmental setting for wildland fire is described by segment in Section D.20.1.2 above; the environmental setting would apply equally to the alternatives.

D.20.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Four impacts related to wildland fire were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.20.3.3.

Impact WF-1: Construction or maintenance activities would increase the probability of a wildland fire

The relocated structures would be located in the same area and same fire environment as the Proposed Project structures and would be subject to the same risk of increased probability of wildland fire from ignition sources such as sparks from welding or metal striking metal or stone, parking vehicles over dry vegetation, and improperly discarding smoking materials. The relocation of some towers within the same vicinity would not change the risk associated with these events, which would be the same as for the Proposed Project, as described in Section D.20.3.3.

SCE is required to design the transmission line in accordance with safety requirements of the CPUC's GO 95 and other applicable requirements, including maintenance of clear areas and prescribed distances between conductors and vegetation. As under the Proposed Project, SCE would be required to implement Mitigation Measures WF-1a (Prepare and implement a Fire Management Plan) and VEG-1b (Prepare and implement a Worker Environmental Awareness Program) for the Tower Relocation Alternative.

Impact WF-2: The presence of overhead transmission lines would increase the probability of a wildland fire

A live transmission line that arcs to vegetation is a potential ignition source for a fire. Electrical arcing from power lines can be caused by high-voltage surges and spikes and from such events as a line failure due to a tree fall, the toppling of a pole, or a line breaking during a storm. The relocation of selected towers to new positions near the proposed locations would not change this potential. The same tower and conductor designs would be used, and the same construction and vegetation maintenance standards would apply to this alternative as under the Proposed Project. Together, these factors make it highly unlikely that the 220 kV transmission line would pose a fire hazard through arcing or line failure. As well, the ROW currently has 220 kV circuits located in it and this alternative would not add a significant new risk as compared to existing conditions.

No mitigation is required. With implementation of the alternative, conditions in the ROW with regard to wildland fire hazards would not change substantially from existing conditions or from the conditions that would exist under the Proposed Project. SCE would continue maintaining required vegetation clearances and SCE and fire agencies would continue to follow existing or any future procedures for managing wildland fire hazards.

Impact WF-3: The presence of the project would create new obstructions to fire suppression efforts

Structures and conductors affect how fires near them are suppressed and how close firefighters can get to the lines. However, the Proposed Project would result in constraints similar to those created by existing conditions in the ROW and at substations. With implementation of the project, tower and conductor heights in the ROW and safety distances from the transmission line would increase nominally. This would not create a significant change as compared to existing conditions. SCE and fire agencies would continue to follow existing procedures for conducting and managing wildfire suppression, including making firefighting crews and pilots aware of the location and energization status of lines.

Relocation of some towers would slightly alter the path of the transmission line, but would not create a condition that differs from the Proposed Project with regard to fire suppression. The towers would be of comparable height to those under the Proposed Project, but would be located somewhat farther from the edge of the ROW.

Impact WF-4: Construction or maintenance activities would result in a vegetation fuel mix that increases ignition potential and rate of fire spread

Disturbed ground is vulnerable to being colonized by invasive vegetation (weeds) that can be more fire prone than the vegetation that was present before the disturbance. The amount of disturbed land would be the same under the Tower Relocation Alternative and the Proposed Project. The alternative location would substitute for the originally proposed location. The same vegetation and ROW maintenance requirements would apply regardless of tower location. Similar to the Proposed Project, if the vegetation mix is altered through the introduction of species that increase ignition potential and the rate of fire spread, this could increase the risk to any nearby structures or communities. Therefore, Mitigation Measure VEG-2a (Prepare and implement an Integrated Weed Management Plan) is required.

D.20.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Four impacts were identified under the Proposed Project for wildland fire. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.9.3.3, except where otherwise noted.

Iowa Street is not a wildland area; therefore, the impact of this alternative with regard to wildland fire would be identical to the Proposed Project.

Impact WF-1: Construction or maintenance activities would increase the probability of a wildland fire

Undergrounding the 66 kV line in Iowa Street would not increase the probability of a wildland fire. With the exception of this underground section, the project would be implemented as proposed and would require implementation of mitigation measures as described for the Proposed Project. These include Mitigation Measures WF-1a (Prepare and implement a Fire Management Plan) and VEG-1b (Prepare and implement a Worker Environmental Awareness Program).

Impact WF-2: The presence of overhead transmission lines would increase the probability of a wildland fire

The undergrounding of the line in Iowa Street would not increase the probability of a wildland fire. With the exception of this underground section, the project would be implemented as proposed; no mitigation would be required.

Impact WF-3: The presence of the project would create new obstructions to fire suppression efforts

The underground line would not create obstructions to fire suppression efforts. With the exception of this underground section, the project would be implemented as proposed; no mitigation would be required.

Impact WF-4: Construction or maintenance activities would result in a vegetation fuel mix that increases ignition potential and rate of fire spread

The underground line would be in a street and would not result in a vegetation fuel mix that increases ignition potential and rate of fire spread. With the exception of this underground section, the project would be implemented as proposed. Implementation of Mitigation Measure VEG-2a (Prepare and implement an integrated weed management plan) would ensure that this impact is less than significant.

D.20.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Four impacts were identified under the Proposed Project for wildland fire. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.20.3.3, except where otherwise noted.

Impact WF-1: Construction or maintenance activities would increase the probability of a wildland fire

Wildland fires put firefighters, residents, workers, buildings, and natural resources at risk. Such fires can damage or destroy property and resources and result in personal injury or death. Any activity that increases the probability of a wildfire would be of major concern. Where the ROW, existing substations, or construction yards are located in or near wildlands, project-related activities at these locations have the potential to be an ignition source for a wildland fire.

Examples of ignition sources include sparks from welding or from metal striking metal or stone, which could ignite surrounding vegetation, parking vehicles over dry vegetation, where hot undercarriages could ignite grass or shrubs, and improperly discarded smoking materials.

SCE is required to design the transmission line in accordance with safety requirements of the CPUC's GO 95 and other applicable requirements, including maintenance of clear areas and prescribed distances between conductors and vegetation.

The new and existing reconductored structures would be located in the same corridor and same fire environment as the Proposed Project structures and would be subject to the same risk of increased probability of wildland fire from ignition sources such as sparks from welding or metal striking metal or stone, parking vehicles over dry vegetation, and improperly discarding smoking materials. The location of the new and existing towers within the same ROW would not change the risk associated with these events, which would be the same as for the Proposed Project. However, due to the decreased amount of construction activity, this risk of starting a fire would be slightly reduced.

SCE is required to design the transmission line in accordance with safety requirements of the CPUC's GO 95 and other applicable requirements, including maintenance of clear areas and prescribed distances between conductors and vegetation. As under the Proposed Project, SCE would be required to implement Mitigation Measures WF-1a (Prepare and implement a Fire Management Plan) and VEG-1b (Prepare and implement a Worker Environmental Awareness Program).

Impact WF-2: The presence of overhead transmission lines would increase the probability of a wildland fire

A live transmission line that arcs to vegetation is a potential ignition source for a fire. Electrical arcing from power lines can be caused by high-voltage surges and spikes and from such events as a line failure due to a tree fall, the toppling of a pole, or a line breaking during a storm.

Arcing that potentially could start a fire is more common with lower voltage distribution lines than with higher voltage lines. Lower voltage lines typically are on shorter structures and in closer proximity to trees and vegetation. Fire hazards from high-voltage transmission lines are reduced through the use of taller structures made of steel and wider ROWs, in which trees are cleared or trimmed to reduce this hazard.

System protection features are designed to minimize fire hazard due to a fallen conductor from an overhead high-voltage line, safeguarding the public and line equipment. These protection systems consist of transmission line relays and circuit breakers designed to rapidly detect faults and cut-off power to avoid shock and fire hazards. This equipment typically is set to operate in a time interval range from 2/60 to 3/60 of a second. The system is designed to de-energize the line, perform a test, and then lock the line out of service.

In addition, the three high-voltage conductors that comprise a circuit are spaced to prevent contact between the conductors in high wind conditions, and the entire line has lightning-strike protection installed overhead. High-voltage transmission lines towers and poles do not have installed on them equipment, such as pole transformers, that might fail. Such pole-mounted equipment normally is associated with distribution circuits.

SCE is required to design the transmission line in accordance with safety requirements of the CPUC's G.O. 95 and other applicable requirements.

Together, these factors make it highly unlikely that the 220 kV transmission line would pose a fire hazard through arcing or line failure. As well, the ROW currently has 220 kV circuits located in it and the Proposed Project would not add a significant new risk as compared to existing conditions.

A live transmission line that arcs to vegetation is a potential ignition source for a fire. Electrical arcing from power lines can be caused by high-voltage surges and spikes and from such events as a line failure due to a tree fall, the toppling of a pole, or a line breaking during a storm. The new and existing structures that would be reconductored in this alternative would not increase the probability of a wildland fire compared to the Proposed Project. The tower and conductor designs would be slightly different (see Appendix 5), but the same construction and vegetation maintenance standards would apply to this alternative as under the Proposed Project. Proper ROW maintenance would minimize the likelihood that the 220 kV transmission lines in this alternative would pose a fire hazard through arcing or line failure. As well, the ROW currently has 220 kV circuits located in it and the Phased Build Alternative would not add a significant new risk as compared to existing conditions.

No mitigation is required. With implementation of this alternative, conditions in the ROW with regard to wildland fire hazards would not change substantially from existing conditions or from the conditions that would exist under the Proposed Project. SCE would continue maintaining required vegetation clearances and SCE and fire agencies would continue to follow existing or any future procedures for managing wildland fire hazards.

Impact WF-3: The presence of the project would create new obstructions to fire suppression efforts

The presence of the structures and conductors comprising the high-voltage transmission line poses a hazard to firefighters and affects how fires near the line would be managed and suppressed. The combination of dense smoke and hot gases generated by a large fire directly under or near a high-voltage transmission line can create a conductive path that increases the potential of a "flashover." A flashover is when electricity jumps across an air gap to create a conductive path. This may occur between wires or from wires to the ground (Powerlink, 2009). The hazard associated with fires near high-voltage lines is two-fold: ionized smoke and gases can provide a pathway for electricity to arc between an energized line and the ground, firefighters, or their equipment; and the presence of the transmission line in airspace used by firefighting aircraft poses a collision risk.

When a fire is not close to a power line, ground firefighting resources conduct fire suppression efforts as normal. If the fire is in closer proximity to a power line, firefighters are instructed to maintain a distance of 1.5 times the height of the structure away from the line, if it is energized. During wildland fire incidents, pilots are supplied with overhead hazard maps and are regularly briefed on the location of power lines in and around the areas where they are operating. SCE's Fire Management Team provides liaisons to all fire agencies within the SCE service territory. This includes wildland fire response, electrical safety training for first responders, hazard mitigation, and prescribed burn coordination. SCE and fire agencies coordinate on when it is necessary to de-energize a line.

Obstructions associated with the presence of the Proposed Project would be similar in nature to those associated with transmission lines currently in the ROW. The Proposed Project consists of the removal of single-circuit 220 kV lines and installation of double-circuit 220 kV lines in the existing ROW. Single circuits would be replaced with double circuits to increase transmission system capacity. Many existing structures would be removed and many of the new structures would be in positioned in different locations and would be somewhat taller than existing structures. The heights of individual structures vary along a transmission line, depending on their topographic locations and the length of the spans between structures. The existing 220 kV towers and poles range up to 174 feet high. The replacement structures would range up to 184 feet high for lattice steel towers and up to 200 feet high for tubular steel poles. Overall, the height difference between existing and proposed structures would be approximately 20 feet.

Based on the instruction to firefighters to keep 1.5 times the structure height away from transmission lines during a fire event, the Proposed Project pole and tower structures would require firefighters to remain approximately 300 feet (1.5 x 200 feet) from the line when it is energized line (as compared to approximately 276 feet now (1.5 x 184)). If the line is energized, a fire passing through the ROW would not be suppressed within this no-go zone. The changes in tower and pole height and location and the conductor spans between these structures would nominally increase the width of this no-go zone, but that increase does not constitute a significant change from what now exists in the ROW. Pilots engaged in fire suppression have been trained in their work and are aware of the hazards posed by transmission lines, the locations of which are provided to them.

The changes in the 220 kV lines in the ROW under the Proposed Project would not substantially alter the current approach to fire suppression in the vicinity of the ROW and would not create significant new obstructions as compared to existing conditions.

No mitigation is required. Structures and conductors affect how fires near them are suppressed and how close firefighters can get to the lines. However, the Proposed Project would result in constraints similar to those created by existing conditions in the ROW and at substations. With implementation of the project, tower and conductor heights in the ROW and safety distances from the transmission line would increase nominally. This would not create a significant change as compared to existing conditions. SCE and fire agencies would continue to follow existing procedures for conducting and managing wildfire suppression, including making firefighting crews and pilots aware of the location and energization status of lines.

The Phased Build Alternative would result in constraints similar to those created by existing conditions in the ROW and at substations. With implementation of this alternative, tower and conductor heights in the ROW would increase for the locations where existing single-circuit structures would be replaced with new double-circuit structures. This would not create a substantial change as compared to existing conditions or as compared to the Proposed Project. For various locations along the West of Devers corridor, structures in this alternative would be located further from the edge of the ROW compared to the Proposed Project. In these locations, obstructions to fire suppression efforts for adjacent residences would be reduced slightly. SCE and fire agencies would continue to follow existing procedures for conducting and managing wildfire suppression, including making firefighting crews and pilots aware of the location and energization status of lines. The new and existing towers that would be reconductored in this alternative would not create a condition that substantially differs from the Proposed Project with regard to fire suppression. No mitigation is required.

Impact WF-4: Construction or maintenance activities would result in a vegetation fuel mix that increases ignition potential and rate of fire spread

Disturbed ground is vulnerable to being colonized by invasive vegetation (weeds) that can be more fire prone than the vegetation that was present before the disturbance.

A non-vegetated buffer area is required to be maintained around transmission structures. For all lines operating above 110 kV, this buffer area extends 10 feet out from each footing on a lattice steel tower or from the base of a tubular steel pole. Conductors for transmission lines over 110 kV are required to have a radial distance of 10 feet from any vegetation they could contact. This requirement includes accounting for the sway of the conductor in windy conditions.

Given the height of the conductors above the ground and the distance between conductors and vegetation that are required to be maintained, if a fire were to pass under the transmission line it is unlikely to damage the line. Similarly, support structures are unlikely to be damaged by a fire. In addition, in wildland areas the vegetation along the ROW primarily is grasses and shrubs. When dry, this material would burn rapidly and would not create a sustained heat load sufficient to damage the transmission line.

However, if the vegetation mix is altered through the introduction of species that increase ignition potential and the rate of fire spread, this could increase the risk to any nearby structures or communities.

The amount of disturbed land would be reduced under the Phased Build Alternative compared to the Proposed Project. For the majority of the corridor, one set of double-circuit structures that would be replaced under the Proposed Project would be left in place under this alternative. The same vegetation and ROW maintenance requirements would apply regardless of tower location. Similar to the Proposed Project, if the vegetation mix is altered through the introduction of species that increase ignition potential and the rate of fire spread, this could increase the risk to any nearby structures or communities. Therefore, Mitigation Measure VEG-2a (Prepare and implement an Integrated Weed Management Plan) is required.

D.20.5 Environmental Impacts of No Action Alternative

D.20.5.1 No Project Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

Devers to Beaumont Substation. As shown in Figure D.20.2, the area between Devers Substation to south of Highway 111 is a moderate fire hazard severity zone. The flat and sparsely vegetated landscape between Devers Substation and the foot of the San Jacinto Mountains is highly susceptible to wildfire. When the 500 kV route enters the steep topography of the San Jacinto Mountains, the fire hazards severity ranges from high to very high. Much of this area has burned repeatedly. This high to very high fire hazard severity designation on applies to most of the landscape between here and Beaumont Substation. Steep slopes, fire prone vegetation, and high winds make the area particularly susceptible to wildfire. Examples of fire ignition sources associated with construction include sparks from welding, sparks from metal striking metal or rocks, discarded smoking materials, and parking vehicles over dry vegetation. Similar to the Proposed Project, construction along the No Action Alternative would be required to anticipate and mitigation fire risks by having a comprehensive fire management plan that would require appropriate adequate fire suppression equipment at construction sites, having specific fire-prevention protocols for activities such as welding, banning smoking and open flames, training of workers in fire prevention, prohibiting parking outside of designated areas, and restricting work on Red Flag days.

Beaumont Substation. The Beaumont Substation site is in a moderate fire hazard severity zone, owing to its less steep terrain. Nevertheless, the dry grassy vegetation of the area is prone to fire during much of the year and can spread rapidly under windy conditions. Therefore, similar fire prevention approaches as described for the 500 kV alignment above would apply to the substation area.

Beaumont to El Casco Substation. Much of the 220 kV route between Beaumont Substation and El Casco Substation is in high to very high fire hazard severity zones because of the steep terrain and fire-prone vegetation. As with the rest of the No Action alignment, the area is prone to dry winds during fire season. These conditions are similar to those that occur north of El Casco Substation, in The Badlands west of San Timoteo Canyon Road. Similar fire planning and implementation as applies to the 500 kV line and Beaumont Substation would apply to the 200 kV segment of No Action Alternative Option 1.

D.20.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. The route passes through rugged and remote lands including the foothills surrounding Steele Peak and Estelle Mountain, and the Cleveland National Forest. With the exception of the Perris Valley at the eastern end of this alternative, the entire route is located on land that has a fire hazard severity classification of Very High. Like No Action Alternative Option 1, ignition sources related to construction and operation of the new 500 kV circuit would have a very high potential to ignite a wildfire in the rugged and often dry land surrounding the corridor. Mitigation would be the same as for Option 1.

D.20.6 Mitigation Monitoring, Compliance, and Reporting

Table D.20-1 presents the mitigation monitoring, compliance, and reporting actions for wildland fire.

Table D.20-1. Mitigation Monitoring Program – Wildland Fire

MITIGATION MEASURE	**WF-1a: Prepare and implement a Fire Management Plan.** A Project-specific fire prevention plan for both construction and operation of the project shall be prepared by SCE and submitted to for review prior to initiation of construction. The draft copy of this Plan is to be provided to each fire agency at least 90 days before the start of any construction activities in areas designated as Very High or High Fire Hazard Severity Zones. Plan reviewers shall include CPUC, BLM, CAL FIRE, San Bernardino and Riverside Counties, and local municipal fire agencies with jurisdiction over areas where the project is located. Comments on the Plan shall be provided by SCE to all other participants, and SCE shall resolve each comment in consultation with CAL FIRE, BLM, and the Morongo Fire Department, as appropriate. The final Plan shall be approved by these agencies at least 30 days prior to the initiation of construction activities. SCE shall fully implement the Plan during all construction and maintenance activities. A project Fire Marshal or similar qualified position shall be established by SCE to enforce all provisions of the Fire Management Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. SCE shall monitor construction activities to ensure implementation and effectiveness of the plan. The Plan shall include at a minimum SCE's Specification E-2005-104 (Transmission line Project Fire Plan), including any updates and amendments, and other requirements specified below. The plan should recognize and prepare for the high probability that fast moving, wind driven wildfires will burn adjacent or through the Proposed Project with some regularity as the result of severe fire weather conditions, flash fuels such as provided by perennial grasslands, and abundant ignition sources. Wind driven fires can quickly overcome operational and maintenance crews, placing their health and safety at risk. The Plan shall cover: ▪ The purpose and applicability of the plan; ▪ Responsibilities and duties; ▪ Preparedness training and drills; ▪ Procedures for fire reporting, response, and prevention that include: – identification of daily site-specific risk conditions – the tools and equipment needed on vehicles and to be on hand at sites – reiteration of fire prevention and safety considerations during tailboard meetings – daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity, ▪ Coordination procedures with BLM and San Bernardino and Riverside County fire officials. ▪ Crew training, including fire safety practices and restrictions, ▪ Method for verification that Plan protocols and requirements are being followed.
Location	All project segments
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits Fire Management Plan and confirms coordination and consultation with fire agencies.
Effectiveness Criteria	Plan is implemented during construction
Responsible Agency	CPUC/BLM
Timing	At least 90 days before construction, submit plan to fire agencies; 30 days prior to construction, submit approved plans or documentation of consultations with fire agencies if approvals or comments have not been obtained.

D.20.7 References

CAL FIRE. 2014a. State Responsibility Area, Statewide GIS layer. http://frap.fire.ca.gov/data/frapgisdata-subset.php. Accessed 6/11/2014.

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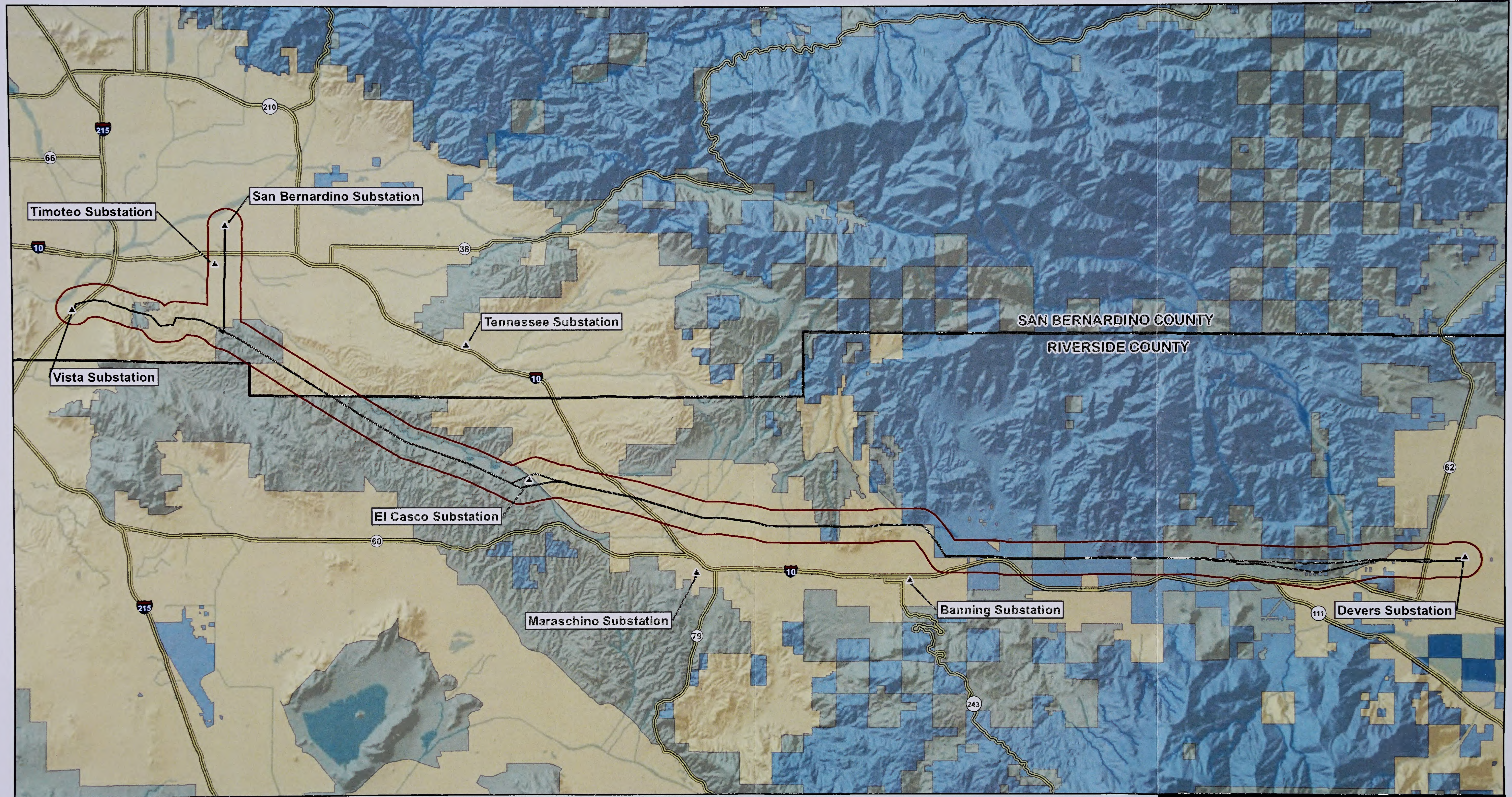


Source: SCE 2013
CalFire 2014a

N W E S

0 1 2 4 6 Miles

Legend

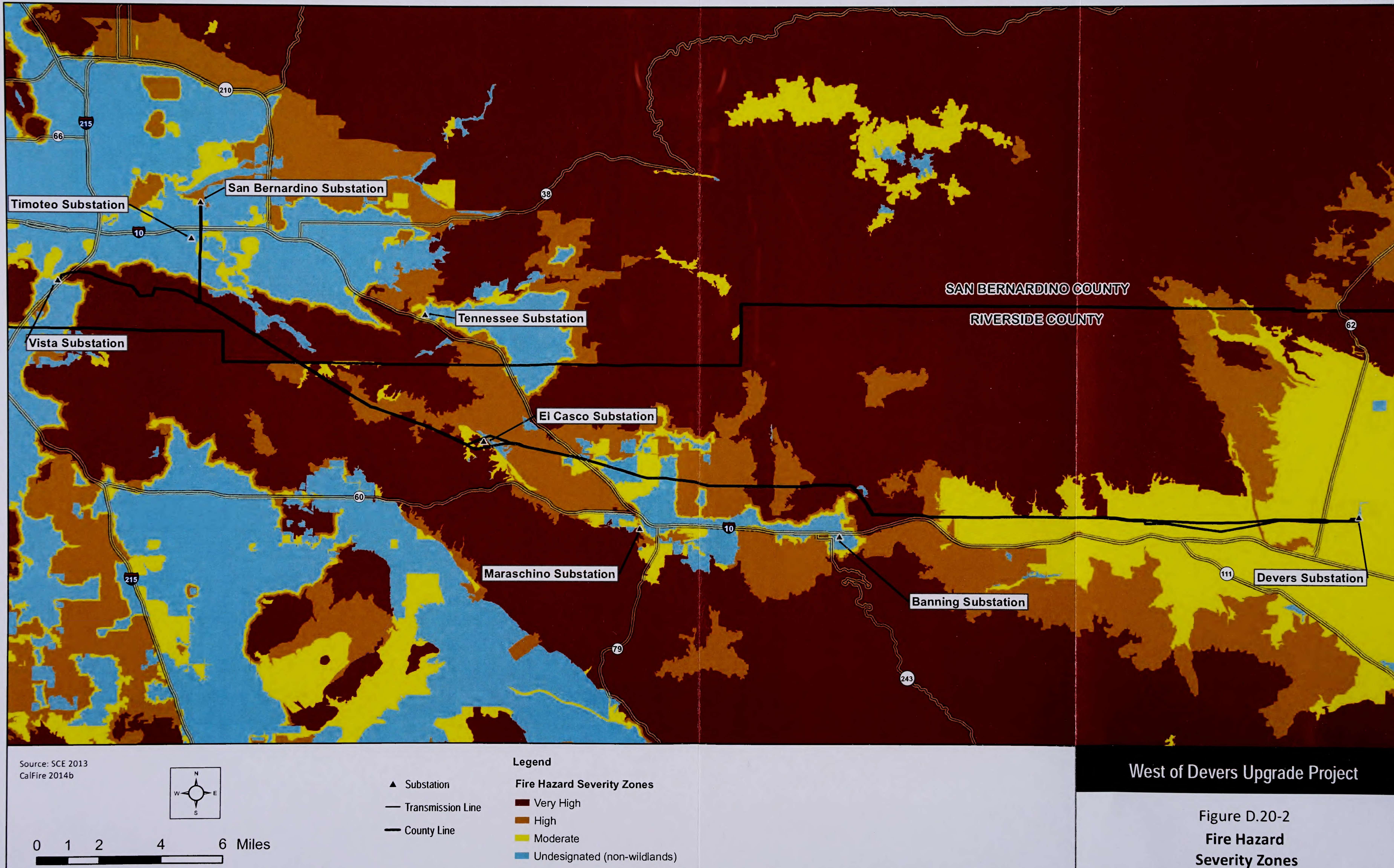
- ▲ Substation
- Transmission Line
- County Line
- 1-Mile Corridor

Fire Protection Responsibility Area
- Federal
- State
- Local

West of Devers Upgrade Project

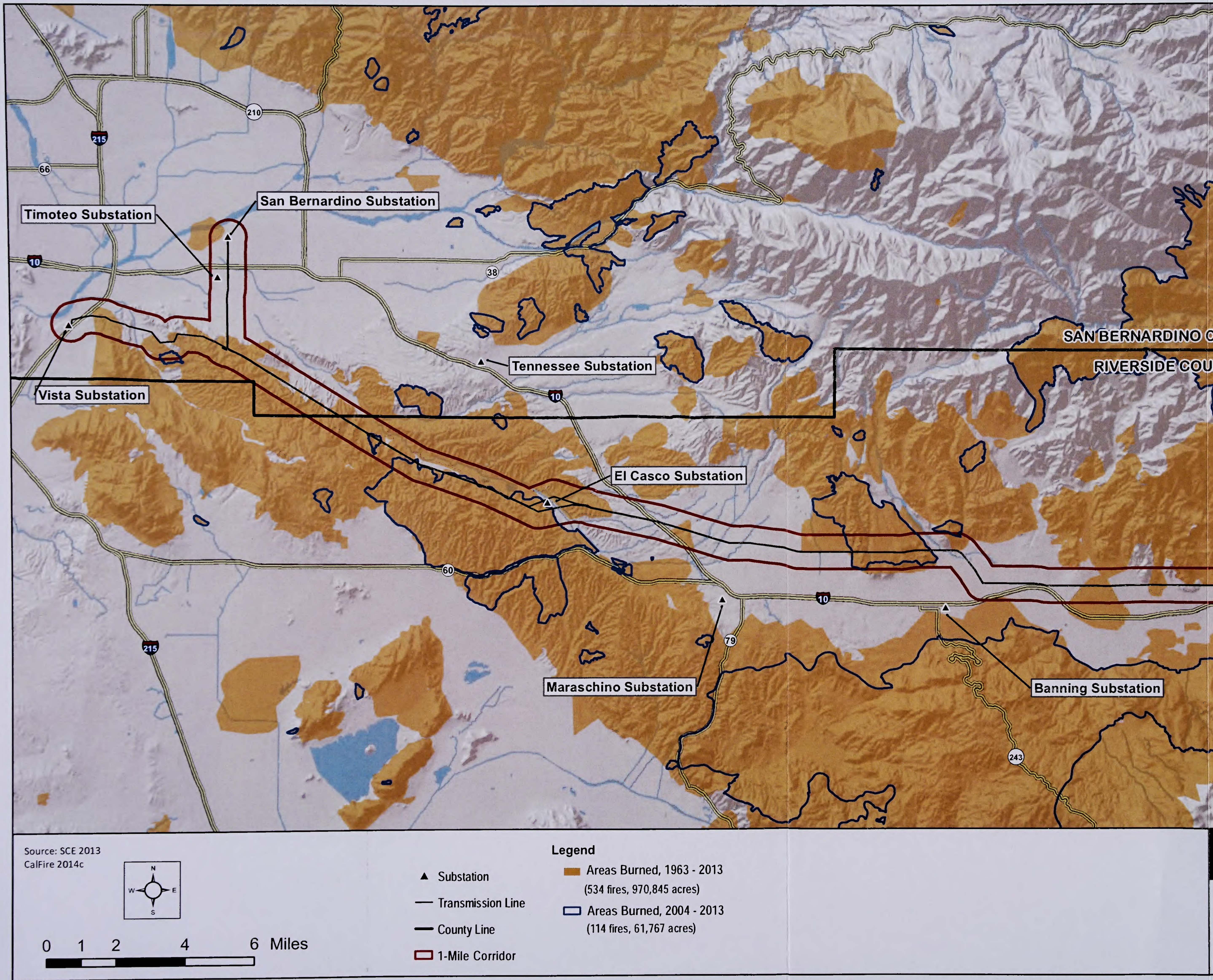
Figure D.20-1
Fire Protection Responsibility Areas

July 2016



West of Devers Upgrade Project

Figure D.20-2
Fire Hazard Severity Zones



West of Devers Upgrade Project

Figure D.20-3
Fire History

July 2016

D.21 Electrical Interference and Safety

This section describes certain effects that are unique to public safety in the vicinity of electrical transmission, including electrical interference and hazards. Please see EIS Section B.5 for information on electric and magnetic fields (EMF). The following discussions address existing environmental conditions in the affected area, identify and analyze environmental impacts, and recommend measures to reduce or avoid adverse impacts anticipated from project construction and operation. In addition, existing laws and regulations relevant to electrical interference and safety are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the project. Section D.21.1 presents the affected environment for Electrical Interference and Safety. Relevant regulations and standards are summarized in Section D.21.2. Sections D.21.3 through D.21.5 describe the impacts of the Proposed Project and the alternatives. Section D.21.6 presents the mitigation measures and mitigation monitoring requirements, and D.21.7 lists references cited.

D.21.1 Environmental Setting / Affected Environment

This analysis is not presented by segment, as is done for the other resources, because the impact is more general and applies to the entire Proposed Project route.

Electrical Hazards and Interference

Corona, gap discharges, and audible noise from transmission lines consist of high frequency energy; however, they are transmitted at a lower power level than radio and television broadcasts. Therefore, these transmissions attenuate within a short distance from the transmission line. As such, the affected environment would be along the entire length of the transmission line, but only for a narrow width of several hundred feet on each side of the transmission line ROW. Audible noise from transmission lines is addressed in Section D.13 Noise, and is not discussed further in this section.

Radio/Television/Communication/Electronic Equipment Interference

Corona discharges form at the surface of a transmission line conductor when the electric field intensity on the conductor surface exceeds the breakdown strength of air. The breakdown of air generates light, audible noise, radio noise, ozone, conductor vibration, and causes a dissipation of energy (EPRI, 1982). The Institute of Electrical and Electronic Engineers (IEEE) has published a design guide (IEEE Radio Noise Subcommittee, 1971) that is used to limit conductor surface gradients so as to minimize corona levels which would cause electronic interference.

Gap discharges occur when an arc forms across a gap in loose or worn line hardware, and can also be a source of high frequency energy. It is estimated that over 90 percent of radio and television interference problems for electric transmission lines are due to gap discharges. Line hardware is designed to be problem-free, but wind motion, corrosion, and other factors can create a gap discharge condition. When identified, gap discharges can be located and remedied by utilities by tightening loose fittings or replacing worn hardware.

Electric fields from power lines do not typically pose interference problems for electronic equipment in businesses since the equipment is shielded by buildings and walls. However, magnetic fields can penetrate buildings and walls, thereby interacting with electronic equipment. Depending upon the sensitivity of equipment, the magnetic fields have been found to interfere with electric equipment operation. Review of this phenomenon in regard to the sensitivity of electrical equipment identifies a number of thresholds for magnetic field interference. Interference with cathode ray tube (CRT) type televisions or computer monitors can be detected at magnetic field levels of 10 mG and above, while large screen or high-resolution CRT monitors can be susceptible to interference at levels as low as 5 mG. Other specialized equipment, such as medical equipment or testing equipment can be sensitive at levels below 5 mG. Equipment that may be susceptible to very low magnetic field strengths is typically installed in specialized and controlled environments, since even building wiring, lights, and other equipment can generate magnetic fields of 5 mG or higher.

The most common electronic equipment that can be susceptible to magnetic field interference is older CRT televisions or computer monitors. Magnetic field interference results in disturbances to the image displayed on the monitor, often described as screen distortion, "jitter," or other visual defects. In most cases it is annoying, and at its worst, it can prevent use of the monitor. This type of interference is a recognized problem in the video monitor industry. As a result, there are manufacturers who specialize in monitor interference solutions and shielding equipment. Possible solutions to this problem include: relocation of the monitor, use of magnetic shield enclosures, software programs, and replacement of CRT monitors with current technology displays that are not susceptible to magnetic field interference.

Induced Currents and Shock Hazards

Power line fields can induce voltages and currents on conductive objects, such as metal roofs or buildings, metal fences, and vehicles. Transmission lines are designed to limit the short circuit current, from conductive items beneath the line, to a safe level (less than 5 milliampere). When a person or animal comes in contact with a conductive object, a perceptible current or small electric shock may occur. These small electric shocks cause no physiological harm; however, they may present a nuisance.

Cardiac Pacemakers

An area of concern related to electric fields from transmission lines has been the possibility of interference with cardiac pacemakers. There are two general types of pacemakers: asynchronous and synchronous. The asynchronous pacemaker pulses at a predetermined rate. It is generally immune to interference because it has no sensing circuitry and is not exceptionally complex. The synchronous pacemaker, however, pulses only when its sensing circuitry determines that pacing is necessary. Interference from transmission line electric field may cause a spurious signal on the pacemaker's sensing circuitry. However, when these pacemakers detect a spurious signal, such as a 60 Hz signal, they are programmed to revert to an asynchronous or fixed pacing mode of operation, returning to synchronous operation within a specified time after the signal is no longer detected. Cardiovascular specialists do not consider prolonged asynchronous pacing a problem, since some pacemakers are designed to operate that way. Periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. So, while transmission line electric fields may interfere with the normal operation of some of the older model pacemakers, the result of the interference is not harmful, and is of short duration (IEEE, 1979; EPRI, 1985).

D.21.1.1 Environmental Setting for Connected Actions

The connected solar projects would be located in rural or remote areas and would interconnect to existing substations. The lines connecting the generators to the substations (gen-tie lines) would be in existing transmission line corridors or require new corridors. The effect in terms of electrical interference and safety would be similar in nature to the Proposed Project. However, the connected action projects are in remote or rural areas and the population in the vicinity of these lines would be low.

D.21.2 Applicable Regulations, Plans, and Standards

Relevant, and potentially relevant, statutes, regulations and policies for electrical interference and safety are discussed below.

D.21.2.1 Federal

Electrical Hazards and Interference

Radio/TV/Communications/Electronic Equipment Interference

There are no federal regulations with specific numerical limits on high frequency emissions from electric power facilities. Federal Communication Commission (FCC) regulations require that transmission lines be operated so that no harmful communication systems interference is produced (FCC regulations).

Induced Currents and Shock Hazards

The National Electrical Safety Code (NESC) specifies that transmission lines be designed to limit the power line field strength at ground level such that the short circuit current from vehicles or large objects near the line will be no more than 5 milliampere (mA). This requirement serves to limit the magnitude of electrical shock that the public could encounter from induced currents on large ungrounded metal objects in the vicinity of transmission lines. Although the NESC is titled as a "National" code it is intended as a guide standard and does not constitute a regulation unless it is adopted and codified by state or municipal governments. In the case of California, the CPUC has issued General Order No. 95 (G.O. 95), Rules for Overhead Electric Line Construction, as the relevant standard for transmission lines.

D.21.2.2 State

California Public Utility Commission Guidelines

Induced Currents and Shock Hazards. Overhead transmission lines must meet the requirements of the CPUC, General Order No. 95, Rules for Overhead Electric Line Construction. This design code addresses shock hazards to the public by providing guidelines on minimum clearances to be maintained for practical safeguarding of persons during the installation, operation, or maintenance of overhead transmission lines and their associated equipment.

D.21.2.3 Local

No local regulations have been identified pertaining to electrical interference and electrical hazards.

D.21.3 Environmental Impacts of the Proposed Project

D.21.3.1 Approach to Impact Assessment

The impact assessment for electrical interference and hazards was conducted through a review of the change in power line field strength in the environment that would occur due to the construction and operation of the project. Within the ROW, the proposed transmission line would be the predominant source of electrical interference and hazards. Further, the area within the transmission line ROW is within the control of SCE with regard to development land use restrictions and public access. In areas outside of the ROW, and as the distance from the transmission line increases, there may be other sources of electrical interference and hazards not associated with the project that affect the level of electrical interference.

Therefore, the edge of the transmission line ROW was adopted as the point of reference for assessing Project impacts with respect to electrical interference and hazards.

D.21.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures related to electrical interference and hazards.

D.21.3.2 Impact Criteria

For purposes of the analysis, the Project or an alternative would create electrical interference and safety impacts if maintenance of Project facilities during Project operations would:

- Create interference with radio, television, communications, or electronic equipment.
- Create hazards to the public through Project-induced currents or shocks.
- Create interference with cardiac pacemakers.

D.21.3.3 Impacts and Mitigation Measures

This section presents discussion of impacts related to electrical interference and safety, and mitigation measures for the West of Devers Upgrade Project.

Electrical Hazards and Interference

The Proposed Project would cause changes in power line field strength as the locations of energized conductors would change during construction and in the final configuration of the transmission lines after construction is complete. These changes in field strength at the edge of the ROW could cause the following types of electrical interference and hazards.

Impact EIS-1: Project could create interference with radio, television, communications, or electronic equipment

Electric and magnetic fields from power lines occur at a frequency level that is substantially below the frequency range of communications systems and do not typically pose interference problems for communication equipment, as can be seen from the proliferation of cell phone arrays that are mounted directly on transmission line structures.

Corona or gap discharges related to high frequency radio and television interference impacts are dependent upon several factors, including the strength of broadcast signals and are anticipated to be very localized, if it were to occur. Individual sources of adverse radio/television interference impacts can be located and corrected on power lines. Conversely, magnetic field interference with electronic equipment, such as older CRT monitors, can be corrected through the use of software, shielding, or changes at the monitor location. Mitigation Measures EIS-1a and EIS-1b would limit interference by reducing corona discharges from the energized conductor and by addressing loose connections that result in gap discharges.

Mitigation Measures for Impact EIS-1: Project could create interference with radio, television, communications, or electronic equipment

The Proposed Project's direct and indirect impacts to electrical interference with radio, television, communications, or electronic equipment during O&M would be minimized or avoided through the implementation of Mitigation Measures EIS-1a and EIS-1b, presented below. Mitigation Measure EIS-1a (Limit the conductor surface gradient) ensures reduction of the conductor surface gradient in accordance with the IEEE Radio Noise Design Guide. In addition, Mitigation Measure EIS-1b (Document and resolve electronic interference complaints) ensures complaints regarding electronic interference would be logged and resolved to the extent feasible.

EIS-1a **Limit the conductor surface gradient.** As part of the design and construction process for the project, SCE shall limit the conductor surface gradient in accordance with the Institute of Electrical and Electronic Engineers Radio Noise Design Guide.

EIS-1b **Document and resolve electronic interference complaints.** After energizing the transmission line, SCE shall respond to, document, and resolve radio/television/electronic equipment interference complaints received. These records shall be made available to the CPUC and BLM for review upon request. All unresolved disputes shall be referred by SCE to the CPUC for resolution.

Impact EIS-2: Project-induced currents or shocks would create hazards to the public

Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential adverse impact that can be mitigated. These impacts do not pose a threat in the environment if the conducting objects are properly grounded. Mitigation Measure EIS-2a (Implement grounding measures) would provide a conductive path to ground thereby avoiding a buildup of electrical potential that could discharge as an electrical shock.

Mitigation Measures for Impact EIS-2: Project-induced currents or shock would create hazards to the public

Mitigation Measure EIS-2a (Implement grounding measures) ensures minimization of induced voltages that could create shocks or currents.

EIS-2a **Implement grounding measures.** As part of the siting and construction process, SCE shall identify objects (such as metal fences, metal buildings, and metal pipelines) within and near the right-of-way that have the potential for induced voltages and shall implement electrical grounding of metallic objects in accordance with SCE's standards. The identification of objects shall document the threshold electric field strength and metallic object size at which grounding becomes necessary.

Impact EIS-3: The project could create interference with cardiac pacemakers

The function of some pacemakers could be altered by exposure to electric fields that would be generated in the immediate vicinity of the project (i.e., adjacent to the transmission line ROW), potentially resulting in inaccurate detections by the pacemaker of normal cardiac signals or resulting in inappropriate behavior, until the field strength is reduced by the individual leaving the immediate area. However, the biological consequences of transient, reversible pacemaker malfunction are mostly benign because, as discussed above, most modern units revert to a fixed-rate pacing mode, which is life-sustaining (IEEE, 1979). There are, however, exceptions, which include: individuals that are completely dependent on their pacemakers for maintaining all cardiac rhythms; individuals whose pacemakers function in inhibited modes, where field interference could severely compromise cardiovascular function; and individuals with compromised coronary circulation who are prone to episodes of reduced cardiac blood flow (IEEE, 1979).

Such episodes that would occur at the same time that the pacing becomes fixed-rate or irregular are dangerous, because these individuals would be more easily triggered into ventricular fibrillation (EPRI, 1997). The precise coincidence of an individual being exposed to high electric fields within a transmission line ROW and a biological need of that individual for the full function of his/her pacemaker would appear, in general, to be a rare event (IEEE, 1979). However, given the data available, the probability of such a coincidence to occur cannot be estimated. Clear exceptions to this conclusion are individuals who are completely dependent on a pacemaker for all cardiac rhythms (IEEE, 1979).

Given the rarity of an exposure event to occur simultaneously with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause harmful interference to the operations of cardiac pacemakers. No mitigation is proposed.

D.21.3.4 Impacts of Connected Actions

The impacts of the connected solar projects in terms of electrical interference and safety would be similar to those described for the Proposed Project. The impacts would be created by the gen-tie lines connecting the solar projects to SCE substations. Because of the remote location of the solar projects, the potentially affected population would be small.

Impact EIS-1: Project could create interference with radio, television, communications, or electronic equipment

This impact would be similar to the Proposed Project, but reduced in severity due to the short length and remote location of the gen-tie lines.

Impact EIS-2: Project-induced currents or shocks would create hazards to the public

This impact would be similar to the Proposed Project, but reduced in severity due to the short length and remote location of the gen-tie lines.

Impact EIS-3: The project could create interference with cardiac pacemakers

This impact would be similar to the Proposed Project, but reduced in severity due to the short length and remote location of the gen-tie lines.

D.21.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.21.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Electrical interference and safety within the ROW is described in Section D.21.1.1 above; the description of the environmental setting would apply equally to the alternatives.

D.21.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Three impacts related to electrical interference and safety were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.21.3.3, except where otherwise noted.

Impact EIS-1: Project could create interference with radio, television, communications, or electronic equipment

In general, the relocated towers would be moved approximately 50 feet farther from the southern edge of the ROW. Relocating towers in the identified project segments would shift the transmission line slightly farther from the edge of the ROW. This nominal change in distance is not expected to substantially alter (increase or decrease) the effects of the transmission line with regard to electric interference, although the risk of electric interference would be reduced very slightly for the nearest residents. Mitigation Measures EIS-1a (Limit the conductor surface gradient) and EIS-1b (Document and resolve electronic interference complaints) would limit interference by reducing corona discharges from the energized conductor and by addressing loose connections that result in gap discharges.

Impact EIS-2: Project-induced currents or shocks would create hazards to the public

The minor adjustment to the location of these towers would not increase the risk of hazards to the public through project-induced currents or shocks. Mitigation Measure EIS-2a (Implement grounding measures) would provide a conductive path to ground thereby avoiding a buildup of electrical potential that could discharge as an electrical shock.

Impact EIS-3: The project could create interference with cardiac pacemakers

The minor adjustment to the location of these towers would not differ from the Proposed Project's minor risk of interference with cardiac pacemakers. No mitigation is proposed.

D.21.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Three impacts were identified under the Proposed Project for electrical interference and safety. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.21.3.3, except where otherwise noted.

Impact EIS-1: Project could create interference with radio, television, communications, or electronic equipment

This alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. This short underground segment would decrease slightly the effects of the transmission line with regard to electric interference for the nearest residents. Mitigation Measures EIS-1a (Limit the conductor surface gradient) and EIS-1b (Document and resolve electronic interference complaints) would limit interference by reducing corona discharges from the energized conductor and by addressing loose connections that result in gap discharges.

Impact EIS-2: Project-induced currents or shocks would create hazards to the public

This short underground segment would decrease slightly the Proposed Project's risk to the public through project-induced currents or shocks, because the conductors in this area would be underground and not accessible. There would be transition structures at the north and south ends of the underground segment, and these facilities would still have the potential to create shock hazards. With implementation of Mitigation Measure EIS-2a (Implement grounding measures), this impact would be less than significant (Class II).

Impact EIS-3: The project could create interference with cardiac pacemakers

This short underground segment would decrease slightly the risk of interference with cardiac pacemakers as compared with the Proposed Project. Given the rarity of an exposure event to occur simultaneously with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause harmful interference to the operations of cardiac pacemakers. No mitigation is proposed.

D.21.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Three impacts were identified under the Proposed Project for electrical interference and safety. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less intense construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.21.3.3, except where otherwise noted.

Impact EIS-1: Project could create interference with radio, television, communications, or electronic equipment

Electric and magnetic fields from power lines occur at a frequency level that is substantially below the frequency range of communications systems and do not typically pose interference problems for communication equipment, as can be seen from the proliferation of cell phone arrays that are mounted directly on transmission line structures.

Corona or gap discharges related to high frequency radio and television interference impacts are dependent upon several factors, including the strength of broadcast signals and are anticipated to be very localized, if it were to occur. Individual sources of adverse radio/television interference impacts can be located and corrected on power lines. Conversely, magnetic field interference with electronic equipment, such as older CRT monitors, can be corrected through the use of software, shielding, or changes at the monitor location.

In the locations where the structures in this alternative would be farther from the edge of the ROW than the Proposed Project structures, the potential for project-induced electrical interference would be reduced. The same as for the Proposed Project, corona or gap discharges related to high frequency radio and television interference adverse effects are dependent upon several factors, including the strength of broadcast signals and are anticipated to be very localized, if they were to occur. Individual sources of adverse radio/television interference impacts can be located and corrected on power lines. Conversely, magnetic field interference with electronic equipment, such as older CRT monitors, can be corrected through the use of software, shielding, or changes at the monitor location. Mitigation Measures EIS-1a (Limit the conductor surface gradient) and EIS-1b (Document and resolve electronic interference complaints) would limit interference by reducing corona discharges from the energized conductor and by addressing loose connections that result in gap discharges.

Impact EIS-2: Project-induced currents or shocks would create hazards to the public

Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential adverse impact that can be mitigated. These impacts do not pose a threat in the environment if the conducting objects are properly grounded.

Due to the Segment 4, 5, and 6 locations where the alternative would be further from the edge of ROW than the Proposed Project, the potential for hazards to the public due to project-induced currents may be reduced for the nearest residents compared to the Proposed Project. However, because much of the ROW is accessible to the public the risk of project-induced currents or shocks would be substantially the same regardless of the tower locations within the ROW. The same as for the Proposed Project, induced currents and voltages on conducting objects near the proposed transmission lines represent a potential adverse impact that can be mitigated. These impacts do not pose a threat in the environment if the conducting objects are properly grounded. Mitigation Measure EIS-2a (Implement grounding measures) would provide a conductive path to ground thereby avoiding a buildup of electrical potential that could discharge as an electrical shock.

Impact EIS-3: The project could create interference with cardiac pacemakers

The potential for interference with cardiac pacemakers would be slightly reduced compared to the Proposed Project for locations along the corridor where the structures in this alternative would be located further from the edge of the ROW. However, because much of the ROW is accessible to the public the risk of interference with cardiac pacemakers would be substantially the same regardless of the tower locations within the ROW. The same as for the Proposed Project, the function of some pacemakers could be altered by exposure to electric fields that would be generated in the immediate vicinity of the project (i.e., adjacent to the transmission line ROW), potentially resulting in inaccurate detections by the pacemaker of normal cardiac signals or resulting in inappropriate behavior, until the field strength is reduced by the individual leaving the immediate area. However, the biological consequences of transient, reversible pacemaker malfunction are mostly benign because, as discussed in Section D.21.3.3, most modern units revert to a fixed-rate pacing mode, which is life-sustaining. Given the rarity of an exposure event to occur simultaneously with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause harmful interference to the operations of cardiac pacemakers. No mitigation is proposed.

D.21.5 Environmental Impacts of No Action Alternative

D.21.5.1 No Action Alternative Option 1

No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

No Action Alternative Transmission Lines and Beaumont Substation. Development of the 500 kV/220 kV transmission line from Devers to El Casco Substation would cause changes in power line field strength at the edge of the ROW. This could cause interference with radio, television, communications or electronic equipment and induce currents or shocks that would be hazards. The potential for these impacts to occur is common to all high-voltage lines. Mitigation measures include limiting the conductor surface gradient as part of the design and construction process (in accordance with the IEEE Radio Noise Design Guide); documenting and resolving individual complaints of interference; and implementing grounding measures for metal fences, metal building, metal pipelines, etc., within and near the ROW. Another potential impact is interference with cardiac pacemakers. However, most modern pacemakers revert to a fixed-rate pacing mode during transient events. Given the rarity of an exposure event to occur simultaneously with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause harmful interference to the operations of cardiac pacemakers.

D.21.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. The ROW between the Valley Substation and the Serrano Substation contains an existing 500 kV transmission line. This alternative would add a second 500 kV circuit within or adjacent to the existing ROW. Operation of this new circuit would cause changes in the power line field strength at the edge of the ROW. These changes could cause interference with radio, television, communications or electronic equipment. The new circuit could also create a hazard for workers or the public through induced currents or shocks. The function of some pacemakers could be altered by exposure to electric fields that would be generated in the immediate vicinity of the new 500 kV circuit. Electrical interference with modern cardiac pacemakers is not a substantial threat to public health because most modern pacemakers are designed to revert to a fixed-rate pacing mode, which is life-sustaining. The potential electrical interference and electrical hazards associated with the new 500 kV circuit would not be substantially different than under existing conditions, and can be reduced through implementation of recommended mitigation described in the Proposed Project and Option 1.

D.21.6 Mitigation Monitoring, Compliance, and Reporting

Table D.21-1 presents the mitigation monitoring, compliance, and reporting actions for electrical interference and safety.

Table D.21-1. Mitigation Monitoring Program – Electrical Interference and Safety

MITIGATION MEASURE	**EIS-1a: Limit the Conductor Surface Gradient.** As part of the design and construction process for the project, SCE shall limit the conductor surface gradient in accordance with the Institute of Electrical and Electronic Engineers Radio Noise Design Guide.
Location	Entire project
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE has complied with mitigation measure in project design and construction.
Effectiveness Criteria	Conductor surface gradient is limited in accordance with the Institute of Electrical and Electronic Engineers Radio Noise Design Guide
Responsible Agency	CPUC/BLM
Timing	Prior to start of construction

Table D.21-1. Mitigation Monitoring Program – Electrical Interference and Safety

MITIGATION MEASURE	**EIS-1b: Document and Resolve Electronic Interference Complaints.** After energizing the transmission line, SCE shall respond to, document, and resolve radio/television/electronic equipment interference complaints received. These records shall be made available to the CPUC and BLM for review upon request. All unresolved disputes shall be referred by SCE to the CPUC for resolution.
Location	Entire project
Monitoring / Reporting Action	CPUC/BLM monitor or designee reviews records as needed.
Effectiveness Criteria	Complaints are addressed and resolved.
Responsible Agency	CPUC/BLM
Timing	Throughout project duration
MITIGATION MEASURE	**EIS-2a: Implement Grounding Measures.** As part of the siting and construction process, SCE shall identify objects (such as metal fences, metal buildings, and metal pipelines) within and near the right-of-way that have the potential for induced voltages and shall implement electrical grounding of metallic objects in accordance with SCE's standards. The identification of objects shall document the threshold electric field strength and metallic object size at which grounding becomes necessary.
Location	Entire project
Monitoring / Reporting Action	CPUC/BLM monitor confirms that SCE has program to ground objects consistent with SCE standards.
Effectiveness Criteria	Objects are grounded effectively
Responsible Agency	BLM/CPUC
Timing	During construction

D.21.7 References

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______. 1971. Radio Noise Subcommittee Report – Working Group No. 3. Radio Noise Design Guide For High Voltage Transmission Lines. IEEE Transactions on Power Apparatus and Systems, Volume PAS-90, Number 2, p. 833.

E. Cumulative Scenario and Impacts

E.1 Introduction and Methodology

A cumulative impact analysis is called for under NEPA. NEPA identifies three types of potential impacts: direct, indirect, and cumulative. "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7). Under NEPA, both context and intensity are considered in the cumulative analysis. Among other considerations when considering intensity is whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts (40 CFR §1508.27(b)(7)).

The approach used in this EIS is the project list approach, which relied a list of past, present, and probable future projects producing related or cumulative impacts. In addition, analysts considered general plans and other documents, but did not rely on them to establish the cumulative scenario for the analysis.

The project list includes those projects found within a geographic area sufficiently large to provide a reasonable basis for evaluating cumulative impacts. The area over which the cumulative scenario is evaluated may vary by resource, because the nature and range of potential cumulative effects vary by resource. This area is identified as the geographic scope for the analysis of cumulative impacts related to a particular resource.

The analysis of cumulative effects must consider a number of variables. These include geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of the analysis is based on the nature of the geography surrounding the Proposed Project and the characteristics and properties of each resource and the region to which they apply. In addition, each project in a region will have its own implementation schedule, which may or may not coincide with the Proposed Project's schedule.

E.2 Cumulative Projects

E.2.1 Cumulative Project List

Reasonably foreseeable projects that could contribute to the cumulative scenario are listed in Table E-1. The table indicates the project name and project type, as well as its location and status. Each project is identified by a map number, keyed to Figure E-1a. These figures show the locations of projects contributing to the cumulative scenario and their relationship to the Proposed Project. The general study area for cumulative projects is a three-mile radius around project features. Each discipline's analysis may consider a larger or smaller area appropriate to the potential for impacts to combine.

Collectively, these projects represent known and anticipated activities that may occur in the project vicinity and that have the potential to contribute to a cumulative impact. Because the West of Devers Upgrade Project would be linear with occasional nodal facilities along it length, most of the projects in Table E-1 do not interact with the Proposed Project along its entire route. Many projects in the cumulative scenario are limited in their geographic extent. Others, such as the Southern California Gas Company (SoCalGas) and San Diego Gas & Electric Company (SDG&E) North-South Pipeline Project, are linear projects that would overlap with segments of the West of Devers Upgrade Project. Projects in the cumulative scenario become more or less relevant along the length of the Proposed Project, based on their changing proximity to the Proposed Project and, therefore, to the potential for cumulative interactions. As shown on Figure E-1a, most of the projects in the cumulative scenario are located in developed or developing areas in Riverside and San Bernardino Counties, California.

Two projects included in Table E-1 are described in more detail following the table, in Section E.2.2 (North-South Pipeline) and Section E.2.3 (Future 500 kV Transmission Line). Five additional projects are listed in the "Regional Projects" category because they are energy projects relevant to the Proposed Project. These projects would not require construction of the Proposed Project in order to operate (like the Connected Actions described in Section B.7 and analyzed in Section D), but their impacts could combine with those of the Proposed Project. In general, these projects are located too far east for impacts to combine, but in some disciplines a cumulative effect would occur and is described in the analysis in Section E.3.

E.2.2 North-South Pipeline

The CPUC determined in September 2014 that it would act as CEQA lead agency for environmental review of the proposed North-South Pipeline Project, which is the subject of an application filed in December 2013 by SoCalGas and SDG&E (Application A.13-12-013). The proposed route and related facilities for the North-South Pipeline Project are shown on Figure E-1a and in Table E-1. As proposed, the alignment and construction activities would intersect and run parallel to portions of the West of Devers corridor, particularly near Segments 1, 2, and 3. The North-South Pipeline Project would be a pipeline interconnection to transport 800 million cubic feet of natural gas per day. The proposed 36-inch diameter pipeline would begin in the City of Adelanto in the high desert area of San Bernardino County at the Adelanto Compressor Station. It would proceed southerly through the Cajon Pass, passing through the San Bernardino National Forest, and the cities of San Bernardino, Loma Linda, and Moreno Valley, terminating at the Moreno Pressure Limiting Station. The originally proposed route extended from Moreno Valley to Whitewater, but that route segment has been eliminated by the developer

E.2.3 Future 500 kV Transmission Line in WOD Corridor

E.2.3.1 Background

In most of Segments 3 through 6 (San Timoteo Canyon to Devers Substation), SCE has designed the Proposed Project to be located very near one edge of its existing right-of-way (ROW), retaining as much as 200 feet of vacant space in the ROW to allow for future expansion of its transmission system. According to SCE, its proposed installation of the rebuilt transmission lines near one side of the existing ROW would "maximize use of the existing corridor" to "enable potential future use of the corridor." SCE characterizes the retention of maximum vacant space "prudent long-term planning" to "facilitate [an] expansion in the future...." In response to CPUC data requests, SCE indicated that:

> *(1) the project will meet the Califarnia Independent Systems Operator's "generotion interconnection requests" for the next 10 years and that SCE has "no current plon, nor ony reosonobly foreseeable future phase far additionol tronsmission lines,"*
>
> *(2) only certoin segments of the project right-of-woy could focilitote odditionol tronsmission lines, and*
>
> *(3) opprovol from the Morongo Bond of Mission Indians would be needed to develop ony such future tronsmission lines [on Morongo lond] ond SCE hos not obtoined such opprovols. If o future 500 kV line were opproved by the Morongo Bond of Mission Indions, the impocts of this future tronsmission line would be as described in this cumulotive onolysis.*

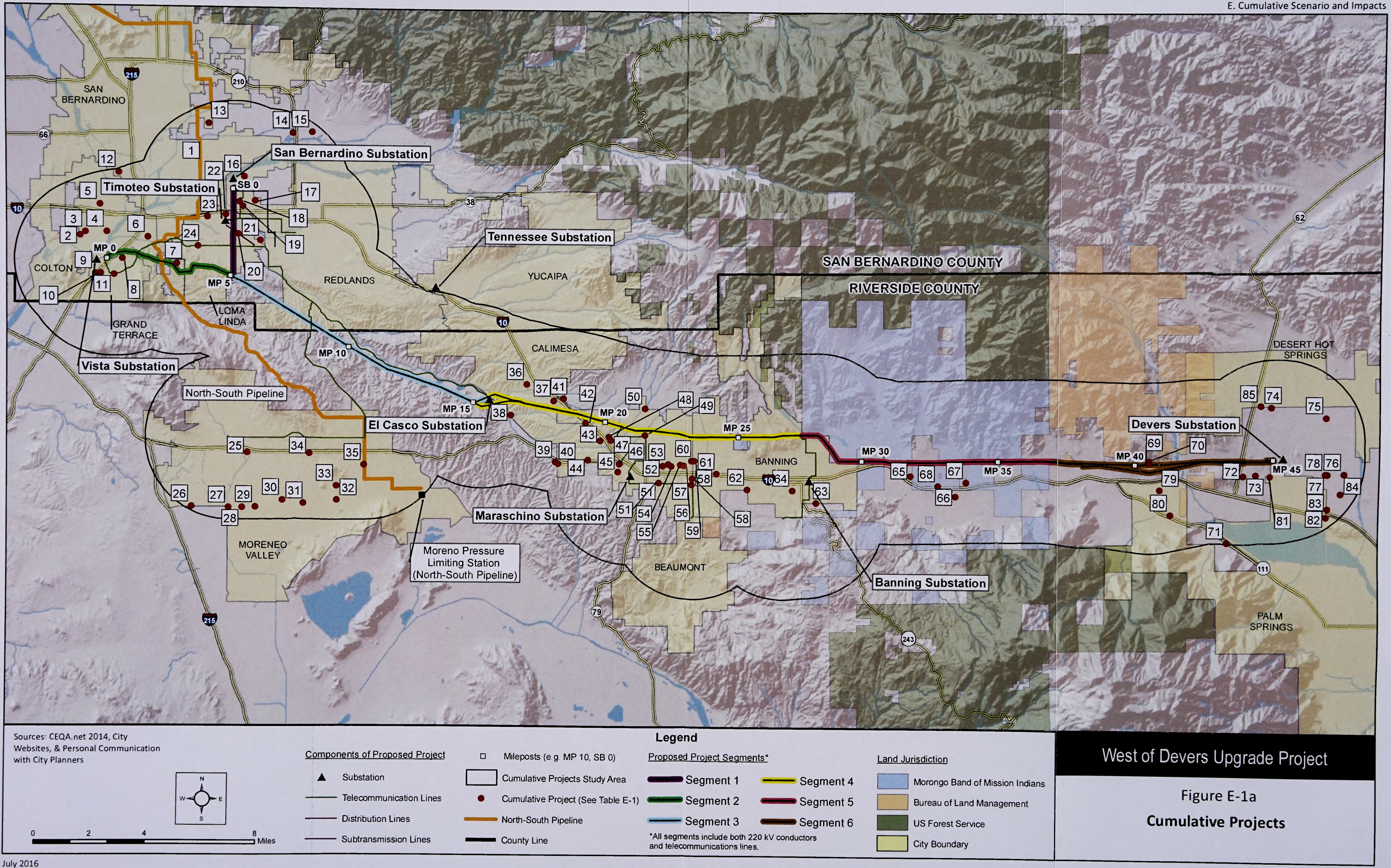


Figure E-1a
Cumulative Projects

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
REGIONAL PROJECTS				
North-South Pipeline Project: Pipeline interconnection proposed by SoCalGas and SDG&E to transport 800 million cubic feet of natural gas per day. Project components include a 36-inch diameter natural gas pipeline comprised of the Adelanto to Moreno pipeline (63 miles) in addition to the rebuilding of the Adelanto Compressor Station.	Natural gas pipeline	Begins at the Adelanto Compressor Station in Adelanto and proceeds south through the Cajon Pass and San Bernardino National Forest terminating in the City of Moreno Valley.	CPUC beginning CEQA process in fall of 2014.	1
Future 500 kV Transmission Line	Transmission	Analyzed between Devers Substation and Vista Substation	Transmission scenario defined in September 2014 Draft DRECP and EIR/EIS	1a
Blythe Energy Project, Phase II also known as Sonoran Energy Project (CAISO Queue 17+219)	Natural gas fired generation	On BLM land, northwest of City of Blythe; east of Palen/McCoy Wilderness	Approved by CPUC and BLM in 2005 but not yet under construction. In August 2015, AltaGas Sonaran Energy Inc. filed a petition with the CEC to modify the Final Decision for the project. The CEC is in the process of reviewing the petition. A decision on the project would be anticipated no earlier than 2016.	n/a
NextEra Genesis Project and NextEra McCoy Project (CAISO Queue 193)	Solar PV and Solar Thermal	On BLM land. Genesis is north of I-10 and southwest of McCoy Peak. McCoy: northwest of City of Blythe; east of Palen/McCoy Wilderness	Genesis is completed and online. Construction began in early 2015 on 250 MW of the McCoy Solar Project.	n/a
NextEra Blythe Project (CAISO Queue 294)	Solar PV	West of City of Blythe; east of Palen/McCoy Wilderness	Approved by CEC and BLM; construction started January 2015	n/a
IID Path 42 Upgrades	Transmission	Transmission line upgrades from south of Salton Sea to Devers Substation	Construction in progress	n/a
Solar PV Project connecting at Colorado River Substation 230 kV (CAISO Queue 798, energy only)	Solar PV	Uncertain; assumed to be southwest of Blythe and near Colorado River Substation	Proposed; no NEPA/CEQA started	n/a
Delaney-Colorado River 500 kV Transmission Line	Transmission	East of Blythe to Arizona	Approved by CAISO in 2014	n/a
SEGMENT 1: SAN BERNARDINO				
Colton				
Agua Mansa Logistics Center: Warehouse distribution facility on a 43-acre project site	Industrial	Agua Mansa Road and S. Rancho Avenue	Mitigated Negative Declaration adopted	2

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
San Salvador Preschool Modernization Program: School site modernization and replacement of existing systems (Colton Joint Unified School District)	Educational	San Salvador Preschool: Agua Mansa Rd. and 5th St.	Categorical Exemption applied	3
Drilling and Equipping Wells 30 and 31: construction and equipping of two domestic water production wells to meet City's anticipated water requirements (City of Colton)	Industrial	Fogg Street and Congress Street	Project approved on 2/10/14	4
Colton Senior Housing Project: 120-unit affordable replacement senior housing project (City of Colton)	Residential, Recreation	La Cadena Avenue, E Street, F Street, and 9th Street	Mitigated Negative Declaration adopted.	5
Cooley Ranch Elementary School Modernization Project: School site modernization and replacement of existing systems (Colton Joint Unified School District)	Educational	Cooley Ranch Elementary School: E. Duron St. and S. Cooley Dr. East.	Categorical Exemption applied	6
Reche Canyon Elementary School Modernization Program: School site modernization and replacement of existing systems (Colton Joint Unified School District)	Educational	Reche Canyon Elementary School: S. Ridge View Dr. and Canyon Vista Dr.	Categorical Exemption applied	7
Terrace View Elementary School Modernization Program: School site modernization and replacement of existing systems (Colton Joint Unified School District)	Educational	Terrace View Elementary School: Grand Terrace and Vista Grande Way	Categorical Exemption applied	8
Grand Terrace				
I-215/Barton Rd. Interchange Improvement Project: Reconstruct and widen Barton Road, re-align existing on- and off-ramps, improve local roadways, and modify traffic signals (Caltrans District 8)	Roadway	I-215/Barton Rd.	Project Approved on 3/5/14	9
Grand Terrace Town Square Master Development Plan: Commercial and retail center on 21 acres (City of Grand Terrace)	Commercial	Barton Road and Michigan Street	Project Approved on 12/19/13	10
Barton Plaza Commercial Project: Development of a commercial center on 3.6 acres of land made up of 4 buildings totaling 37,700 sq.ft. with 1,800 sq.ft. of outdoor seating. (City of Grand Terrace)	Commercial	Barton Road/Mount Vernon Ave.	Project Approved 3/1/12	11
San Bernardino				
San Bernardino Valley College Master Plan Stadium Expansion: replace existing bleacher facilities and improve stadium lighting and accessibility (San Bernardino Community College District)	Educational	N/E. Grant Ave.; E/N. Mt. Vernon Ave.; W/S. K St.; S/W. Esperanza St.	Project Approved 7/11/13	12

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
Indian Springs High School Athletic Facilities Improvements: Development and operation of a 3,500 seat grandstand, field lights, aquatic center, and concession/restroom building (San Bernardino City Unified School District)	Educational	6th St. at Del Rosa Dr.	Project Approved; Construction to take place Oct. 2014 through April 2015	13
Segment 2: Loma Linda and Redlands				
Highland				
5th St. Widening and Improvement Project: Widening and improvement of a 3.0-mile segment from 5th St., as well as construct various improvements including pavement rehabilitation, new turn lanes, new Class II Bikeway, sidewalks, and new traffic signals. (City of Highland)	Roadway	5th St. from SR 210 to Del Rosa Dr.	Project Approved on 6/11/13	14
Greenspot & Village Marketplace: 800 dwelling units and approximately 555,000 square feet of commercial development on 83 acres	Specific Plan	N/Greenspot Rd., E/Hwy. 210	Final Approval Pending	15
Redlands				
Redlands Distribution Center: warehouse and distribution center on 37 acres (City of Redlands)	Commercial/Industrial	1950 Palmetto Avenue	Entitlement approved. Currently in plan check review	16
Hillwood Warehouse: warehouse and distribution center on 36 acres (City of Redlands)	Commercial/Industrial	North side of Lugonia Avenue, South side of Almond Avenue, East side of California St.	Entitlement approved	17
McShane Warehouse: warehouse and distribution space on 50 acres (City of Redlands)	Commercial/Industrial	North side of Lugonia Avenue, South side of Almond Avenue, East side of Research Dr.	Entitlement approved. Currently in plan check review	18
Redlands Fulfillment Center: warehouse and distribution center on 50 acres (City of Redlands)	Commercial/Industrial	North side of I-10, South side of Lugonia Avenue, East side of Bryn Mawr	Entitlement approved	19
Middle School 5: construction of a new public middle school with a total of six buildings beginning in 2018 and completed by 2020 (Redlands Unified School District)	Educational	Mission Road and Valencia Avenue	Project approved on 10/22/13	20
Loma Linda				
Loma Linda Alzheimer's Special Care Center: 66-bed memory care facility on a 2.7-acre lot (City of Loma Linda)	Industrial	Southwest corner of New Jersey St. and Orange Avenue	Project constructed	21
Mountain View Marketplace Project: 46,718-square-foot marketplace on approximately 1.07 acres (City of Loma Linda)	Commercial	E/Mountain View Avenue, S/I-10, N/Rosewood Avenue	Mitigated Negative Declaration adopted by the City on 2/25/14	22

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
Holiday Inn Express: Four-story hotel on vacant site (City of Loma Linda)	Commercial	North side of Redlands Blvd., APN 0281-162-37	Mitigated Negative Declaration approved by City Commissioners on 11/6/2013	23
Loma Linda University Health Master Plan Project: construction of new facilities, modernization of existing facilities, and replacement of a portion of the main hospital in response to California's SB 1953 Hospital Seismic Safety Act (City of Loma Linda)	Industrial	Barton Road/Anderson St.	Project approved on 1/14/14	24
Segment 3: San Timoteo Canyon				
Moreno Valley				
Sunnymead Blvd. Storm Drain	Infrastructure	Sunnymead Blvd. from Indian St. to SR-60/Perris Blvd.	Project Approved	25
Cactus Avenue Street Improvements: Addition of a third eastbound lane to the south side of Cactus Avenue from 1-215 off ramp near Commerce Center Dr. to Heacock St.	Roadway	Work commences at Veterans Way and terminates at Heacock St.	Notice of Determination filed 5/9/2013	26
Heacock Channel Improvement Project: Construction of a concrete-lined flood control channel (March Joint Powers Authority)	Industrial	Channel begins at intersection of Cactus Ave. and Heacock St. and runs approximately 10,000 lineal feet terminating at the Heacock St. Bridge.	Notice of Preparation filed 11/6/2013	27
Bayside/Charter/Alternative Schools: New school facilities proposed with an estimated 58,280 square feet to accommodate up to 496 students (Moreno Valley Unified School District)	Educational	Cactus Avenue and Indian Street	Notice of Determination filed 12/12/2013	28
Perris Boulevard Street Improvement Project: Widening Perris Blvd. to 3 northbound and 3 southbound lanes for a total roadway width of 86 feet within a 110-foot right-of-way.	Roadway	Work commences at Cactus Ave. and Perris Blvd. with a total length of 3.5 miles.	Notice of Determination filed 6/12/2013	29
Moreno Valley Field Station Project: Development of 685 acres into a residential development of 2,922 lots and supporting infrastructure (City of Moreno Valley)	Residential	Lassell Street and Brodiaea Avenue	Notice of Determination filed 3/23/2013	30
Nursing and Allied Health Education Building Expansion, Riverside County Regional Medical Center: Construction of a new three-story education center totaling approximately 35,000 square feet (Riverside County Economic Development Agency)	Educational	26520 Cactus Avenue	Project Approved	31

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
Senior Assisted Living Center (City of Moreno Valley)	Residential	Brodiaea Avenue and Moreno Beach	Project Approved	32
Frontier Homes (City of Moreno Valley)	Residential	Moreno Beach and Bay St.	Project Approved	33
SR-60/Nason St Overcrossing Bridge (City of Moreno Valley)	Infrastructure	Nason St./Sr. 60	Project Approved	34
ProLogis Eucalyptus Industrial Park EIR: Construction of 6 individual warehouses totaling 2.2 million sq.ft. (City of Moreno Valley)	Industrial	Eucalyptus Avenue/Redlands Blvd.	Final EIR Submitted	35
Segment 4: Beaumont and Banning				
Calimesa				
Summerwind Ranch at Oak Valley: 677-acre residential development, 315-acre commercial development, and 1493-acre open space development (City of Calimesa)	Residential, Commercial	Between I-10 and San Timoteo Canyon Road	Project approved	36
Cherry Valley Plaza: 18-acre commercial development within Summerwind Ranch (City of Calimesa)	Commercial	N/I-10, W/Cherry Valley Rd., S/Desert Lawn Dr.	Project approved	37
Beaumont				
Fairway Canyon SCPGA, Tract No. 31462: 678-acre residential development and 47-acre commercial/industrial development (City of Beaumont)	Residential; Commerical/Industrial	N/San Timoteo Canyon Rd.; SW/I-10	Specific Plan Approved; Project under development.	38
Jack Rabbit Trail: 402-acre residential development and 4.5-acre commercial/industrial development (City of Beaumont)	Residential	S/SR 60' W/Jack Rabbit Trail	Specific Plan' Annexation Pending	39
Hidden Canyon Industrial: 158-acre commercial/industrial development (City of Beaumont)	Industrial	SE corner of SR 60 and Jack Rabbit Trail	Specific Plan Approved; Pilot Plan Approved	40
Sunny-Cal Specific Plan: Specific Plan would allow 216-acre residential development and 10-acre commercial/industrial development (City of Beaumont)	Residential; Commercial/Industrial	N/Brookside' W/I-10	Specific Plan Approved' Annexation Pending	41
Tournament Hills 1 & 2: Tract No. 30748, Tract No. 31288: 240-acre residential development (City of Beaumont)	Residential	Southwesterly of Desert Lawn Dr. and Champions Dr. and N/San Timoteo Canyon Rd.	Tract 30748 under construction, Tract 31288 Amendment to Oak Valley Specific Plan and EIR Addendum	42
Tournament Hills 3: 64-acre residential development (City of Beaumont)	Residential	N/Oak Valley Pkwy.; W/Desert Lawn Dr.	Amendment to Oak Valley Specific Plan Submitted	43
Heartland: 208-acre residential development and 62-acre commercial/industrial development (City of Beaumont)	Residential; Commercial/Industrial	N/SR 60; W/Potrero Blvd.	Specific Plan Approved; Preliminary grading	44

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
Dowling Orchard Business Park: 26-acre commercial/industrial development (City of Beaumont)	Commercial/Industrial	NW corner of 4th St. and Nicholas Rd.	Under Construction	45
Rolling Hills Ranch Industrial Winco / Prologis: 155-acre commercial/industrial development (City of Beaumont)	Commercial/Industrial	S/SR 60; W/Viele Avenue	Preliminary grading	46
Mountain Bridge: 38-acre commercial/industrial development (City of Beaumont)	Commercial/Industrial	Oak Valley Parkway and E/I-10	Plot Plan Approved	47
Oak Valley Senior Center: 9.4-acre residential development (City of Beaumont)	Residential	NW corner of Oak Valley Parkway and Oak View Dr.	Conditional Use Permit Submitted; Pending Public Hearing	48
Noble Creek Vistas: 223-acre residential development (City of Beaumont)	Residential/ Commercial	N/14th St.' W/Beaumont Avenue	Specific Plan Approved; Annexation Complete	49
Beaumont Unified School District High School Stadium and Expansion (City of Beaumont)	Commercial	Brookside Avenue, west of Beaumont Ave.	Under Construction	50
Seneca Springs (Tracts 31519, 31520, 31521): 225-acre residential development and 13-acre commercial/industrial development (City of Beaumont)	Residential; Commercial/Industrial	W/Manzanita and S/1st St.	Homes recently built-out – Commercial half developed	51
Pennsylvania Avenue Apartments: 0.4-acre residential development (City of Beaumont)	Residential	850 Pennsylvania Avenue	Plot Plan Submitted Pending Public Hearing	52
8th St. Condos: 1.4-acre residential development (City of Beaumont)	Residential	1343 E. 8th St.	Plot Plan Approved	53
American Villas: 2.3-acre residential development (City of Beaumont)	Residential	693 American Avenue	Plot Plan Approved	54
Beaumont Commons: 4.14 16 Plot Affordable Housing (City of Beaumont)	Residential	Xenia between 6th and 8th St.	Project Approved	55
Tuscany Townhomes: 10.9-acre residential development (City of Beaumont)	Residential	Xenia and 8th St.	Plot Plan Approved	56
Four Seasons Tract No. 32260: 424-acre residential development and 9-acre commercial/industrial development (City of Beaumont)	Residential; Commercial/Industrial	S/I-10; W/Highland Springs Avenue	Specific Plan Approved; Homes under construction	57
Ramona Tire/Firestone: 0.4-acre commercial/industrial development (City of Beaumont)	Commercial	1488 Second Street Marketplace	Plot Plan Approved; Parcel Map Approved	58
Sundance: 905-acre residential development and 15-acre commercial/industrial development (City of Beaumont)	Residential; Commercial/Industrial	N/8th St.; W/Highland Springs Avenue	Specific Plan Approved; Project under development	59

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
Banning				
Butterfield Specific Plan: 936-acre residential development with a 45-acre commercial/industrial development and a 429 acres of open space development (City of Banning)	Residential; Commercial/Industrial	Highland Springs Avenue and Wilson Street	Specific Plan Amended and Approved	60
Highland Home Road/I-10 Interchange: Replacing I-10/Highland Home Road interchange with an overcrossing (City of Banning)	Roadway	I-10/Highland Home Road interchange	Project Approved	61
San Gorgonio Pass Campus Master Plan: 50-acre community college with expected full build-out by 2030 (Mt. San Jacinto Community College District)	Educational	Westward Avenue and Sunset Avenue	Final EIR approved by Mt. San Jacinto Community College District	62
Larry D. Smith Correctional Facility Phase III and IV Expansion: Addition of new housing space for all inmate classification levels, with support space for programming, counselling, and classrooms. Also, new fuel station construction will occur.	Industrial	S. Hargrave St. and E. Porter St.	Negative Declaration was prepared and submitted to Riverside Economic Development Agency	63
Rancho San Gorgonio Specific Plan: 849 acre-site with 161 acres located within unincorporated Riverside County and 688 acres within the City of Banning. 9.3-acre commercial space, 214-acre sports field, fire station facility, and community center, 3,412 dwellings.	Residential/ Commercial/Industrial	South side of I-10 between Westward Ave and Sunset and San Gorgonio Avenue	DEIR in preparation	64
SEGMENT 5: MORONGO TRIBAL LANDS AND VICINITY				
Cabazon				
Addition of 78,000 sq.-ft. retail space to Cabazon Outlets (County of Riverside)	Commercial	N/Seminole Dr.; S/Taos Rd.; E/Apache Tr.; W/Millard Pass	Pre-Application Review	65
9-building, 160-unit multi-family residential housing (County of Riverside)	Residential	S/Bonita Ave.; E/Ana Maria St.	Pre-Application Review	66
Construction of a 35,576 sq.-ft. outdoor dinosaur museum (County of Riverside)	Commercial	N/I-10; W/Deep Creek Rd.	Development Review Team	67
Morongo Tribal Lands				
Morongo Outdoor Entertainment Center: a music and events venue with an open amphitheater, event tent, Beach Club, and Forest venue with a combined capacity for 35,500 people (Bureau of Indian Affairs)	Commercial	Seminole Dr. and Millard Pass Rd.	FONSI issued on October 22, 2013	68

Table E-1. West of Devers Upgrade Cumulative Project List

Project	Type	Location	Status	Project ID
SEGMENT 6: WHITEWATER AND DEVERS SUBSTATION				
Whitewater and Unincorporated Riverside County				
Construction of a 100 kW photovoltaic array (County of Riverside)	Industrial	North of I-10, West of Whitewater Canyon	Project Approved	69
Relocate 32 Wind Turbine Sites (County of Riverside)	Industrial	North of I-10, West of Whitewater Canyon	Project Approved	70
Subdivision of 400 R-1 Lots and 5 R-5 Lots (County of Riverside)	Residential	Southerly of Overture Dr. and Southwesterly of Highway 111	Project Approved	71
Replace 33 Existing Wind Turbines (County of Riverside)	Industrial	South of Dillon Rd./West of Worsley Rd.	Project Approved	72
Indoor RV Storage/Covered RV Lot (County of Riverside)	Industrial	N/Dillon Rd. S/Garnet Creek W/Worsley Rd. W/Valley View Dr.	Project Approved	73
Subdivision of 320 acres into 3 residential lots (County of Riverside)	Residential	S/Pierson Blvd. and E/Diablo Rd.	Project Approved	74
60-ft. Wireless Cell Site Faux Water Tower (County of Riverside)	Industrial	S/Pierson Blvd.; W/Indian Canyon Ave.; E/Indian Palms; N/13th St.	Development Review Team	75
Storage Building 34,450 sq.ft. – two 12,000 sq.ft., one 10, 450 sq.ft.(County of Riverside)	Industrial	N/Dillon Rd; E/Little Moraga Rd.; W/Indian Canyon Ave.	Project Approved	76
Commercial and Residential Development (County of Riverside)	Residential/ Commercial	N/Dillon Rd.; E/Indian Canyon Ave.	Project Approved	77
8,729-sq.ft. Restaurant with Assembly Area (County of Riverside)	Commercial	Dillon Rd. & N. Indian Canyon Drive	Project Approved	78
Palm Springs				
60-acre sand and gravel mine, with 10-acre processing site (City of Palm Springs)	Industrial	N/HWY 111 S/I-10 E/Whitewater River W/HWY 62	Project Approved	79
Whitewater Solar: 3.0 MW solar farm (City of Palm Springs)	Industrial	58641 Tipton Rd.	Approved; No Activity	80
Temporary 3 MW Power Generating Station (City of Palm Springs)	Industrial	W/Diablo Rd.; S/Dillon Rd.	Project Approved	81
Fed Ex Distribution Center: 105,600-sq.ft. distribution center (City of Palm Springs)	Industrial	Garnet Rd and W. of North Indian Canyon Rd.	Under Construction	82

Table E-1. West of Devers Upgrade Cumulative Project List

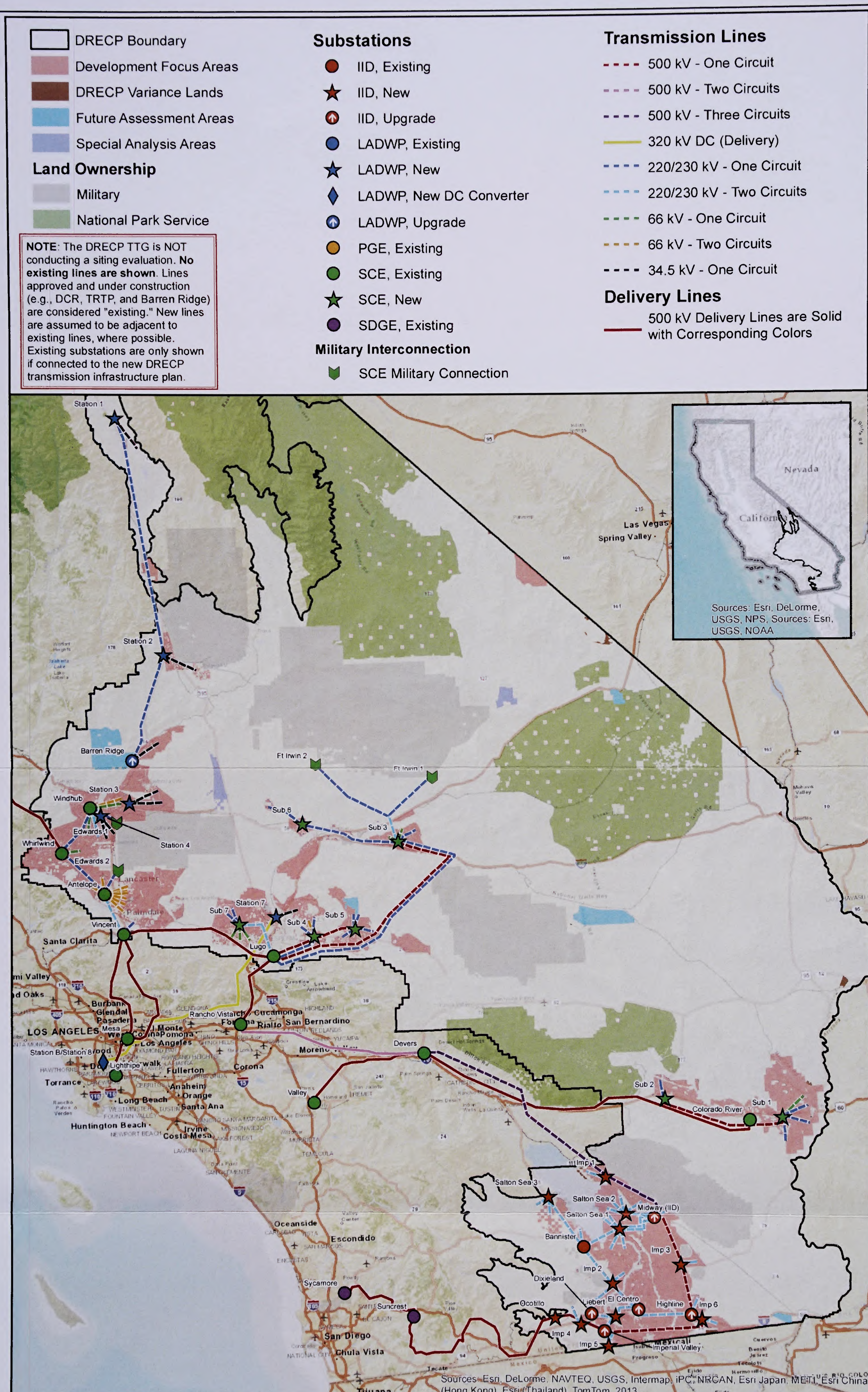
Project	Type	Location	Status	Project ID
Desert Hot Springs				
Construction of 3 warehouse/industrial buildings with a total of 1.5 million sq.-ft. (City of Desert Hot Springs)	Commercial/Industrial	N/20th St. and I-10; E/Indian Avenue	Development Review Team	83
Divide 76 acres into 114 industrial parcels (City of Desert Hot Springs)	Industrial	N/Avenue. 20; S/Dillon Rd.; E/Indian Avenue; W/Little Morongo Rd.	Project Approved	84
Gated Community of 1560 Dwellings and Golf Course (City of Desert Hot Springs)	Residential	N/Pierson Blvd.; E/of Worsley Rd.	Project Annexed	85

While SCE states that it currently has no specific plans for transmission expansion in the WOD corridor, and CAISO has not studied or identified the need for transmission expansion in the WOD corridor beyond SCE's proposed West of Devers Upgrade Project, there are other regional studies that point to the potential for future development. Three regional analyses of renewable energy in the California desert have identified the WOD corridor as the potential location of one or more future 500 kV transmission lines: the Desert Renewable Energy Conservation Plan ("DRECP"), the BLM Solar Programmatic EIS (PEIS), and the CPUC's Long Term Procurement Planning process (LTPP).

- **DRECP.** The DRECP is a species protection plan proposed by the BLM, California Energy Commission (CEC), U.S. Fish and Wildlife Service (USFWS), and other agencies to allow appropriate development of renewable energy projects in the southern California deserts. The Draft DRECP and EIR/EIS was published on September 26, 2014. The development of renewable energy that could occur if the Plan is approved would require the development of additional transmission lines. Where feasible, it is likely that these transmission lines would be proposed to be located in or adjacent to existing lines or corridors, which almost certainly would include segments of SCE's West of Devers right-of-way. The map illustrating potential transmission for the DRECP Preferred Alternative (Transmission Technical Group Alternative 5) shows two 500 kV circuits in the WOD corridor. See Figure E-1b, from the DRECP Transmission Technical Group report.
- **Solar PEIS.** The BLM similarly studied the potential for solar energy development and foreseeable need to expand transmission across six southwestern states, including the southern California deserts, as part of the 2012 Solar PEIS. In the Final Solar PEIS, Volume 2, the PEIS defines potential capacity of the Riverside East Solar Energy Zone (SEZ; the area around the City of Blythe) could be developed up to nearly 24,000 MW. The PEIS states, "...at full build-out capacity, new transmission lines and upgrades of existing transmission lines would be required to bring electricity from the proposed Riverside East SEZ to load centers." The PEIS states that for the first component of the transmission scenario, new lines could be constructed to carry up to 6,400 MW to Los Angeles and up to 740 MW to other nearby counties [Final PEIS, Vol 2, page 9.4-143]
- **CPUC Transmission Planning.** Development scenarios being studied within the CPUC 2014 LTPP include cases that contemplate additional availability of transmission out of the Imperial County renewable energy zone to load centers (Assigned Commissioner's Ruling on Assumptions, Scenarios, and Portfolios of February 27, 2014 in R.13-12-010). The LTPP is a CPUC proceeding to assess utility investment in power contracts and transmission additions to serve future utility loads. The routing for import of renewable power from Imperial Valley to the Los Angeles basin would almost certainly require use of the WOD corridor.

E.2.3.2 Cumulative Transmission Scenario

Based on the information above, the CPUC and BLM have determined that a future 500 kV transmission line in the WOD corridor is foreseeable, and therefore should be evaluated as a cumulative project in this EIS. The line would be built in SCE's existing ROW and along about 40 miles of the 45-mile project ROW. The future 500 kV line could be single-circuit or double-circuit, and for the purpose of this study, it is assumed to be a double-circuit line. The endpoints could be at future facilities developed within or near the existing Devers Substation and SCE's Rancho Vista Substation near Etiwanda, in Rancho Cucamonga.



Source: SCE, 2014.

West of Devers Upgrade Project

Figure E-1b

DRECP Transmission Technical Group Map for Preferred Alternative

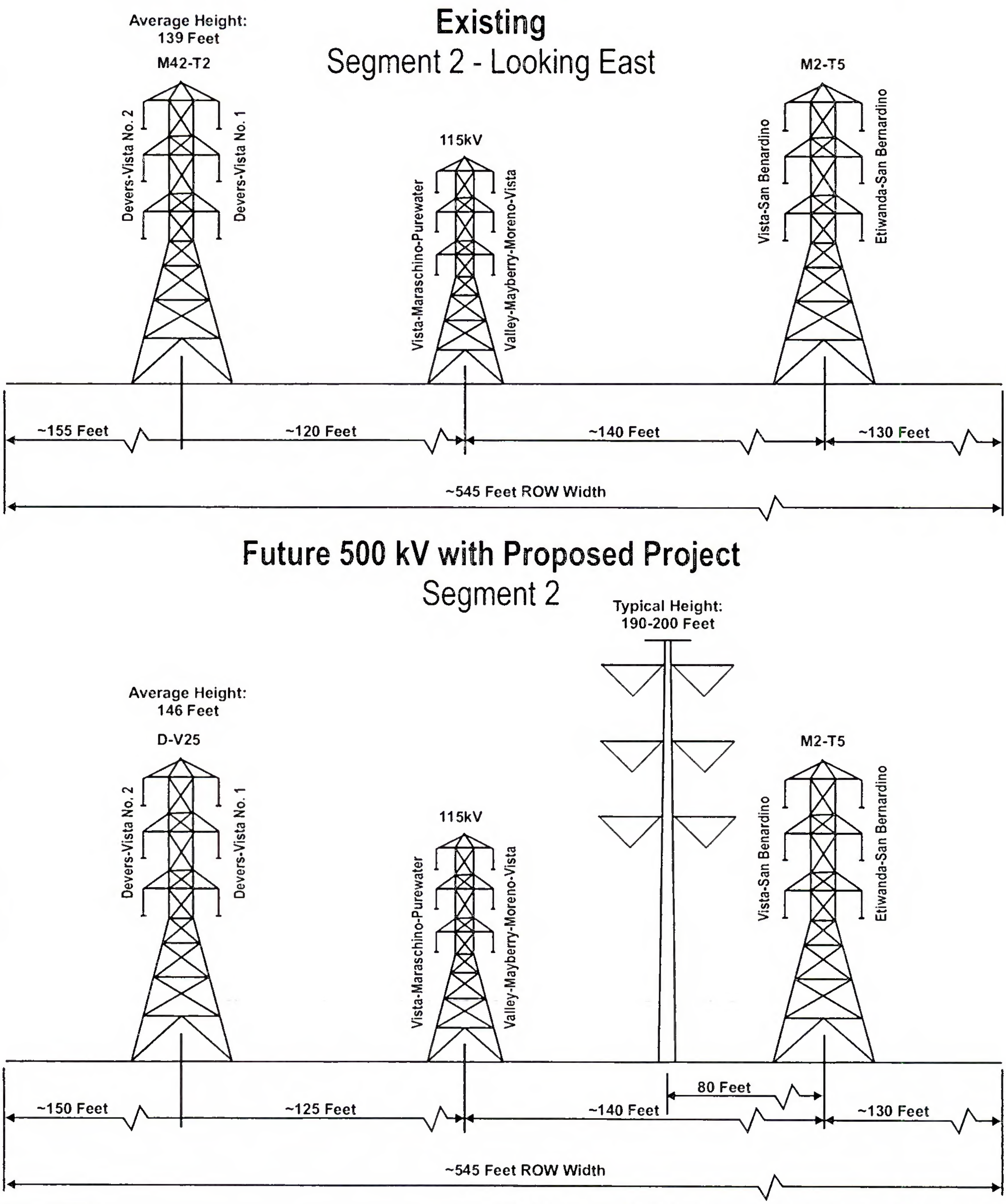
This analysis does not evaluate impacts west of the Vista Substation, because there would be no cumulative impacts in that area. The potential future 500 kV transmission structures in that segment would likely be new tubular steel poles approximately 190 to 200 feet tall, most likely located along an existing transmission corridor. The cumulative analysis in this EIS does include consideration of the following segments:

- **Segment 2:** Between the Vista Substation and San Bernardino Junction, the future 500 kV structures would be tubular steel poles approximately 190 to 200 feet tall, located within existing SCE ROW, between the existing 220 kV towers and existing 115 kV lines that would be unaffected by the WOD project. At San Bernardino Junction, the future 500 kV line would need to cross over the 220 kV circuits to the south.
- **Segment 3:** Between San Bernardino Junction and El Casco (Segment 3), the future 500 kV structures would be located to the south of the proposed pairs of double-circuit 220 kV towers. At or near El Casco, the future 500 kV line would need to cross over the proposed pairs of 220 kV circuits to the north.
- **Segments 4, 5, and 6:** Between El Casco and Devers, the future 500 kV structures would be located to the north of the proposed pairs of double-circuit 220 kV towers within the project ROW.

The route of the future 500 kV line would follow the ROW of the Proposed Project from the Devers Substation to the Vista Substation.

Figures E-2a through E-2d illustrate the ROW cross-section in the center of the route in four areas:

- Figure E-2a shows one Segment 2 profile of the future 500 kV line added to the Proposed Project.
- Figure E-2b shows one Segment 3 profile
- Figure E-2c shows one Segment 4 profile
- Figure E-2d shows one Segment 6 profile.

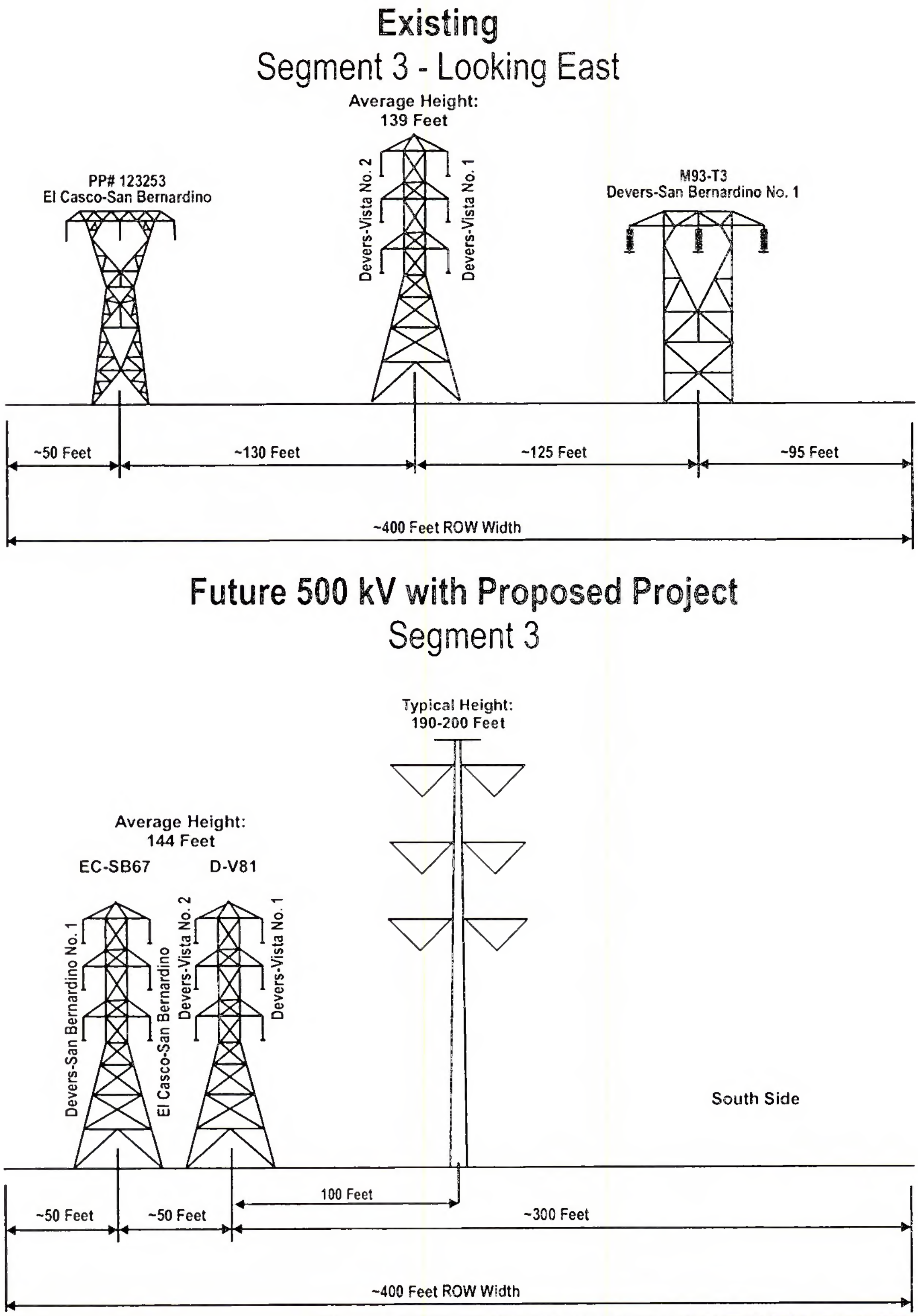


Source: SCE, 2014.

Not to Scale

West of Devers Upgrade Project

Figure E-2a
Cumulative Future 500 kV Corridor Profile
Segment 2

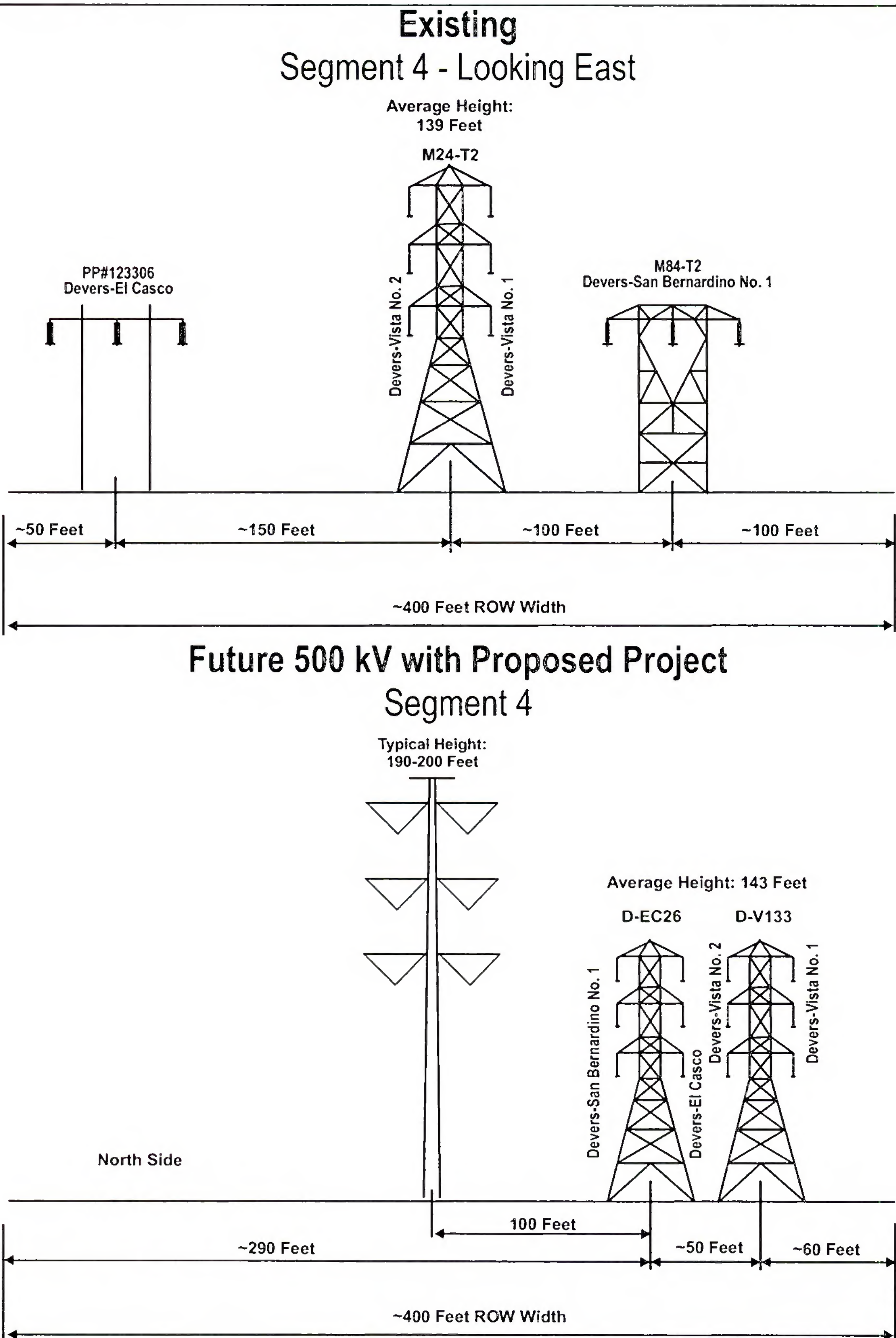


Source: SCE, 2014.

Not to Scale

West of Devers Upgrade Project

Figure E-2b
Cumulative Future 500 kV Corridor Profile Segment 3

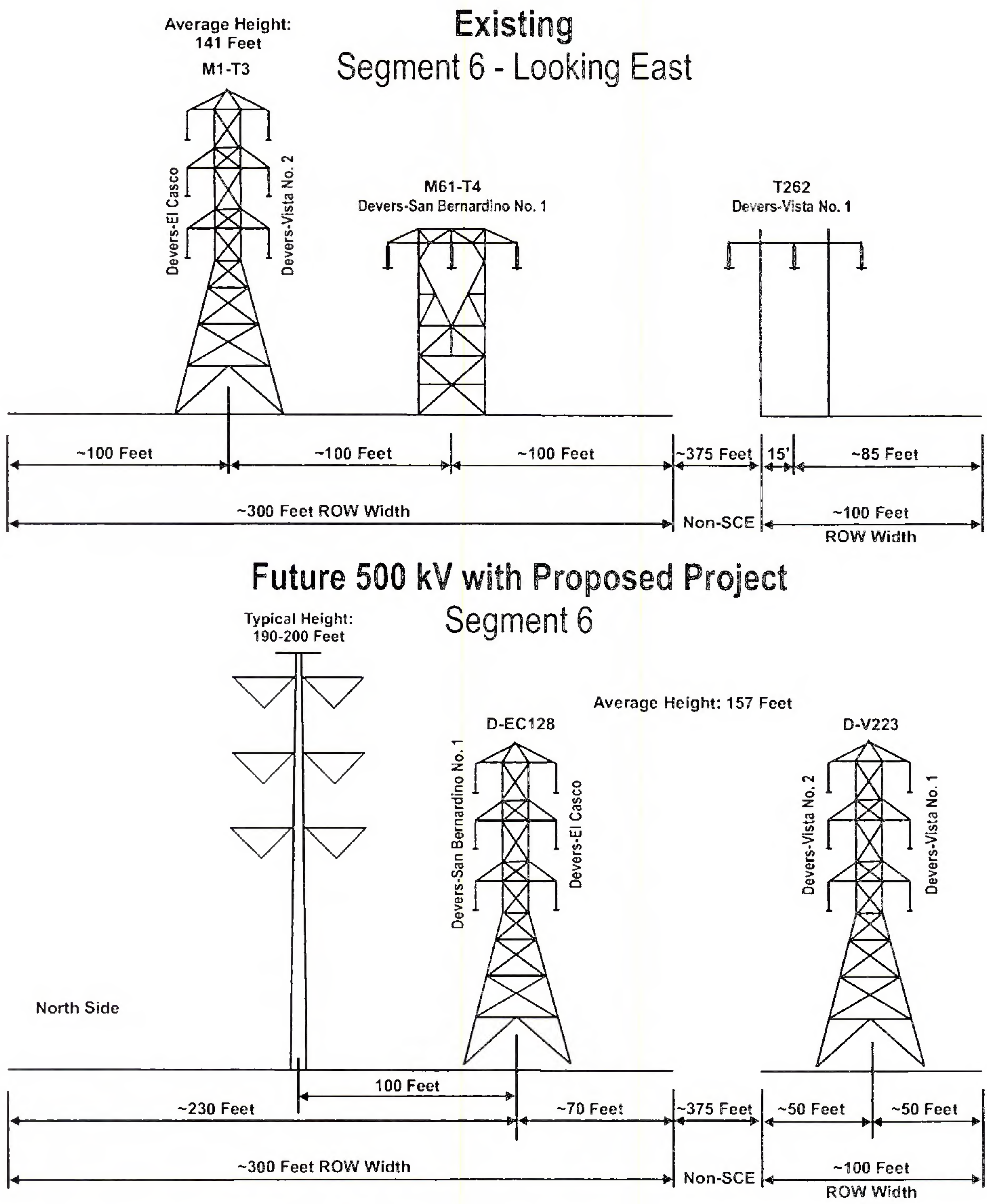


Source: SCE, 2014.

Not to Scale

West of Devers Upgrade Project

Figure E-2c
Cumulative Future 500 kV Corridor Profile Segment 4



Source: SCE, 2014.

Not to Scale

West of Devers Upgrade Project

Figure E-2d
Cumulative Future 500 kV Corridor Profile
Segment 6

E.3 Cumulative Impact Analysis for the Proposed Project

E.3.1 Introduction

The following sections present the cumulative analysis for each of the 20 disciplines considered in Section D of this /EIS. Each section is based on the list of all of the projects within the cumulative projects study area (Table E-1, West of Devers Upgrade Cumulative Project List), and the locations of these projects (shown on Figure E-1a, Cumulative Projects).

For each discipline, the discussion first explains the geographic scope of the cumulative impact analysis. Next, the cumulative effects and their severity are described.

E.3.2 Agriculture

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with agriculture is the area within approximately 3 miles of the Proposed Project, which is the same as the Cumulative Projects Study Area shown in Figure E-1a, Cumulative Projects. This geographic scope is appropriate because it includes a large enough area to account for regional cumulative impacts to agriculture yet is focused enough to represent the Proposed Project's actual potential to combine with the impacts of other cumulative projects.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for agriculture within the cumulative analysis study area. Some examples of development projects that could combine to result in adverse cumulative effects to agricultural resources include: the North-South Pipeline Project near Segments 1, 2, and 3; several warehouse developments near Segment 1; several large residential developments near Segment 4; and a reasonably foreseeable future 500 kV transmission line that would be geographically contiguous with the majority of the Proposed Project. Some examples of projects within the cumulative projects study area that could adversely affect agricultural land include the following:

- Future 500 kV Transmission Line
- North-South Pipeline Project
- Redlands Distribution Center
- Hillwood Warehouse
- McShane Warehouse
- Redlands Fulfillment Center
- Middle School 5
- Summerwind Ranch at Oak Valley
- Fairway Canyon SCPGA
- Sunny-Cal Specific Plan
- Tournament Hills 1 & 2
- Noble Creek Vistas
- Sundance
- Butterfield Specific Plan
- Cabazon Outlets expansion

Construction and operation of numerous past and present projects within the study area have resulted in substantial changes to agricultural land use in the region. The cumulative analysis study area is located in the counties of San Bernardino and Riverside. Agriculture is an important industry in both of these counties. Riverside County's early development was "linked to agriculture but commerce, construction, manufacturing, transportation and tourism soon took hold, contributing substantially to the region's rapid growth" (County of Riverside, 2015). Since that time, the development of numerous residential, commercial, industrial, and infrastructure projects has resulted in the continued loss of agricultural land in the study area. From 2000 to 2002, Riverside County experienced a net decrease of 15,339 acres of important farmland (City of Moreno Valley, 2006). Similarly, from 2006 to 2008, approximately 19,400 acres of irrigated farmland were removed from agricultural use (County of Riverside, 2014a). Based on data from the California Department of Conservation's Farmland Mapping and Monitoring Program for 2010, San Bernardino County contained approximately 925,000 acres of agricultural land, of which approximately 23,000 acres were designated as Important Farmland. In 2010, Riverside County contained approximately 540,000 acres of agricultural land, of which approximately 429,000 acres were designated as Important Farmland.

The current and reasonably foreseeable projects described above would affect agricultural resources in the cumulative analysis study area in a similar manner as past activities. The North-South Pipeline Project near Segments 1, 2, and 3 would traverse several large areas of grazing land and a few smaller areas of Farmland of Local Importance. Several warehouse developments near Segment 1 could impact Farmland of Prime Importance. Also, several large residential developments near Segment 4 could lead to the conversion of Farmland of Local Importance to non-agricultural uses. The reasonably foreseeable future 500 kV transmission line would be geographically contiguous with the majority of the Proposed Project and would traverse a small amount of Important Farmland. Construction and operation of the Proposed Project would result in minor adverse effects to agricultural resources. Approximately 3.5 acres of Important Farmland would be permanently converted to non-agricultural use as a result of construction and operation of the Proposed Project. These potential adverse effects would combine with the adverse effects on agricultural resources from other projects within the cumulative projects study area to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to agricultural resources that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to agricultural resources. However, the incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be minor. Construction and operation of the Proposed Project would lead to the permanent conversion of 3.5 acres of Important Farmland to non-agricultural uses and the temporary disturbance of approximately 32 acres of Important Farmland. This amount of farmland is very small in relation to the total amount of farmland both within the cumulative projects study area and within the region.

The severity of the Proposed Project potential adverse effects to agricultural resources, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of Mitigation Measure AG-3a (Establish agreement and coordinate construction activities with agricultural landowners). The full text of this mitigation measure is presented in Section D.2. With implementation of the mitigation measure described above and in Section D.2, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be negligible.

E.3.3 Air Quality

Geographic Scope

The geographic scope for this cumulative analysis includes the same two air basins that were analyzed for the Proposed Project: the South Coast Air Basin and the Coachella Valley portion of the Salton Sea Air Basin. Most of the Proposed Project would fall within the South Coast Air Basin, which includes Segments 1 through 5. Segment 6 of the Proposed Project would fall within the Salton Sea Air Basin. This geographic scope is appropriate because it accounts for the potential for emissions from other cumulative projects to combine with the emissions of the Proposed Project to exceed air quality thresholds within the two affected air basins.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for air quality within the cumulative analysis study area. Some examples of development projects that could combine to result in adverse cumulative effects to air quality include: commercial and industrial development (including new warehouse construction) near Segments 1 and 2, the North-South Pipeline Project near Segments 1 through 3, several large residential developments near Segment 4, and renewable energy and mining developments near Segment 6, and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the study area have resulted in substantial changes to the air quality of the region. Although air quality has generally improved since the high levels of pollution in the 1970s, the two air basins that are included in this cumulative analysis remain impaired by several pollutants. As described in Section D.3, the South Coast Air Basin is in non-attainment and exceeds the local or federal thresholds for several criteria pollutants, including ozone, PM10, and PM2.5. The Salton Sea Air Basin is in non-attainment and exceeds the thresholds for ozone and PM10.

The current and reasonably foreseeable projects described above and in Table E-1 would affect air quality in the cumulative analysis study area in a similar manner as past activities. Emission of toxic air contaminants (TACs) and criteria pollutants could result from the operation of construction and maintenance vehicles and equipment. Ground disturbance could lead to the mobilization of pollutants such as dust and fine particulate matter. Development of new fossil-fuel based energy production would introduce new stationary sources of air quality pollutants. As described in Section D.3 (Air Quality), the total direct and indirect emissions from construction and operation of the Proposed Project would be below the federal General Conformity rule applicability emission trigger levels, but would exceed the SCAQMD regional or localized thresholds. These potential adverse effects would combine with the adverse effects on air quality from other projects within the cumulative projects study area to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to air quality that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to air quality. Construction and operation of various projects within the cumulative projects study area (such as the examples listed above) could result in emissions of criterial air pollutants that would exceed the General Conformity rule applicability emission trigger levels or the SCAQMD regional or localized thresholds. In additional to criteria air pollutants, the Proposed Project would not involve any notable sources of odors or toxic air contaminants (TACs) other than diesel-fired construction equipment, no individual sensitive receptor would be exposed to substantial concentrations of pollutants, no new stationary sources of TACs would be introduced, and construction-related diesel equipment emissions would not occur at any single location for an excessive duration.

The maximum daily and annual operating emissions from the various Proposed Project operation, maintenance, and inspection activities would not exceed federal General Conformity thresholds. During project operations, emissions would result from limited use of vehicles for routine maintenance, repair, and inspection that would not expose sensitive receptors to substantial concentrations of TACs or odors.

However, the Proposed Project's NOx, VOC, PM10, PM2.5, and CO emissions during construction would remain above the SCAQMD daily threshold values. Therefore, the criteria pollutant construction emissions from the Proposed Project would cause substantial adverse effects. Depending on the timing of construction of other projects within the cumulative projects study area, the air quality adverse effects of the Proposed Project could combine with the air quality adverse effects of the other projects to result in a cumulative adverse effect to air quality, and the incremental contribution of the Proposed Project to the adverse cumulative effect would be substantial.

The severity of the Proposed Project potential adverse effects to air quality, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of Mitigation Measures AQ-1a (Control fugitive dust), AQ-1b (Control off-road equipment emissions), and AQ-1c (Control helicopter emissions). The full text of these mitigation measures is presented in Section D.3. Even with implementation of mitigation measures to control fugitive dust and vehicle emissions, the incremental contribution of the Proposed Project to the adverse cumulative effect would remain substantial.

E.3.4 Biological Resources – Vegetation

Geographic Scope

The geographic scope for this cumulative analysis includes the entire extent of all vegetation communities and special-status plant species of the region that could be adversely affected by construction, operation, restoration, and decommissioning of the Proposed Project. This geographic scope is appropriate because it accounts for the cumulative degradation or loss of a particular vegetation community or special-status plant species of the region from all projects that have impacted or would impact vegetation communities of concern or special-status plant species.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for vegetation within the cumulative analysis study area. Some examples of development projects that could combine to result in adverse cumulative effects to vegetation include: commercial and industrial development (including new warehouse construction) near Segments 1 and 2; the North-South Pipeline Project near Segments 1 through 3; several large residential developments near Segment 4; renewable energy and mining developments near Segment 6; and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the study area have resulted in substantial changes to the vegetation communities of the region. These past and present projects have resulted in direct and indirect adverse effects to vegetation communities through ground disturbance, vegetation removal, the introduction of non-native invasive plant species, the alteration of surface and subsurface flows, the creation of fugitive dust, the interruption of windblown sand transport to downwind habitat, the disturbance or destruction of wetlands, and permanent land use conversion. The cumulative analysis study area traverses several geographical and ecological zones. It traverses the San Timoteo Badlands (Badlands), spans San Timoteo Creek, the San Gorgonio River, and the Whitewater River, and runs through the San Gorgonio Pass into the western Sonoran Desert. Collectively, these areas contain a diverse flora that includes many rare, threatened, and endangered plants, and rare vegetation communities. Twenty-five special-status plant species occur or may occur within the study area, including four species listed under the federal Endangered Species Act (ESA), California Endangered Species Act (CESA), or both. The listed species are Coachella Valley milk-vetch (*Astragalus lentiginosus var.*

coachellae; federal endangered), triple-ribbed milk-vetch (*Astragalus tricarinatus*; federal endangered), Nevin's barberry (*Berberis nevinii*; federal and state endangered), and Mojave tarplant (*Deinandra mohavensis*; state endangered). The development of past residential, commercial, industrial, and infrastructure projects has led to a reduction in habitat for native vegetation and the subsequent special-status classification of several plant species, including the examples listed above.

The impacts of past and present cumulative projects on vegetation have been both temporary and permanent. Temporary impacts to vegetation and habitat have occurred with construction of past and present cumulative projects, where vegetation was removed for temporary work areas, without long-term land use conversion, so that vegetation has returned to a more natural condition or has been actively revegetated or enhanced. However, some areas of disturbance that were not subject to long-term land use conversion are still classified as permanent impacts due to very long recovery times. Desert habitat is an example of vegetation community where an otherwise temporary impact could be considered permanent due to the very long recovery time for various plants within that habitat. Several drainages within the study area were identified with the potential to satisfy the three criteria necessary to meet the U.S. Army Corps of Engineers (USACE) definition of a wetland (i.e., presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology). In general, the extent of wetlands within the study area has been reduced by the development of past and present cumulative projects.

In addition to the direct impacts to vegetation described above, past and present cumulative projects have resulted in several indirect impacts to vegetation. These indirect impacts include dust caused by project activities or vegetation removal, interruption of windblown sand transport to downwind habitat, interruption of surface flows and water or sediment supply to downstream habitat, and the introduction or spread of invasive species.

The current and reasonably foreseeable projects described above and in Table E-1 would affect vegetation resources in the cumulative analysis study area in a similar manner as past activities. Earth movement, grading, and the creation of new impervious surfaces (such as that associated with the residential development projects near Segment 4 or linear projects such as the North-South Pipeline Project or the Future 500 kV Transmission Line) would lead to vegetation removal, the introduction of non-native invasive plant species, the alteration of surface and subsurface flows, the creation of fugitive dust, the disturbance or destruction of wetlands, and permanent land use conversion.

Construction and operation of the Proposed Project would result in adverse effects to vegetation resources, such as permanent vegetation and habitat removal for permanent project facilities, and temporary removal or degradation for temporary project work and access areas. The importance of this adverse effect would vary depending on vegetation or habitat type; in some cases, sensitive habitat such as riparian vegetation, or habitat supporting special-status species, would be permanently or temporarily removed. Project activities would generate dust, which could affect plant physiology and productivity, and degrade surrounding habitat value. Project activities and facilities would have a minor adverse effect on windblown sand transport. Project activities that would interrupt localized surface hydrology could impound stormwater runoff and sediment upstream of road crossings, cause erosion to downstream habitat where flow is redirected, or prevent water and sediment from reaching downstream vegetation and habitat. These effects could damage vegetation and habitat for wildlife, including special-status species, by killing or uprooting plants or eroding or burying burrows. The Proposed Project would affect jurisdictional waters of the State or waters of the U.S. by placing fill material for tower pads or roadways; constructing roadways, culverts, or other crossing structures; installing channel armoring; constructing impoundments or detention basins; or grading or other site preparation that alters natural runoff. Impacts to jurisdictional waters, including intermittent channels, could also affect downstream wetlands, riparian, or aquatic habitat and the biological resources found in those downstream habitats. These potential adverse effects would combine with the adverse effects on vegetation resources from other projects within the cumulative projects study area to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to vegetation resources that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to vegetation resources. The incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be notable. Road construction and improvements, and site preparation for transmission structure demolition or construction, pull sites, staging areas, equipment yards, parking areas, and other project activities would necessitate removing existing vegetation and habitat. This adverse effect would be minor for vegetation and habitat removal in areas with little native habitat value. In other areas, loss of native vegetation would reduce or degrade habitat availability for native plants and wildlife, including special-status species. In some cases, sensitive habitats or vegetation types, or habitats that support listed threatened or endangered species or other special-status species, would be removed. The total acreage of both temporary and permanent loss of for each of the vegetation communities within the Proposed Project study area is presented in Section D.4, Table D.4-4. The total temporary disturbance of vegetation communities for the Proposed Project is approximately 3,180 acres. The total permanent loss of vegetation communities for the Proposed Project is approximately 373 acres.

The Proposed Project also would affect wetland or riparian habitat, vegetation and habitat that may support special-status plants or animals, and vegetation types designated by the California Department of Fish and Wildlife (CDFW) as "communities with highest inventory priority." In addition to the direct adverse effects to native vegetation and habitat, the Proposed Project's construction activities could have several indirect adverse effects to surrounding vegetation and habitat. These impacts may include dust caused by project activities or vegetation removal, interruption of windblown sand transport to downwind habitat, interruption of surface flows and water or sediment supply to downstream habitat, and the introduction or spread of invasive species. The extent and severity of these indirect habitat effects would be dependent on the sensitivity of adjacent habitat and the plants or wildlife it supports.

Approximately one half of the Proposed Project route is located within the Western Riverside Multiple Species Habitat Conservation Plan (WR-MSHCP) planning area, and a portion of the Proposed Project is located within the Coachella Valley Multiple Species Habitat Conservation Plan (CV-MSHCP). SCE is not a signatory to either the WR-MSHCP or the CV-MSHCP; however SCE intends to apply for Participating Special Entity (PSE) status for the Proposed Project to receive take authorization of listed species within both Plan Areas, subject to conditions of applicable state and federal authorizations and the WR-MSHCP and CV-MSHCP Implementing Agreements. If SCE does not obtain PSE status, then no take would be authorized under the MSHCP, and separate ESA, CESA, and other mitigation would be required, as described in Section D.4. Overall, construction and operation of the Proposed Project would result in substantial adverse effects to vegetation resources, and the incremental contribution of the Proposed Project to the substantial cumulative adverse effect would be similarly notable.

The severity of the Proposed Project potential adverse effects to vegetation resources, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of APMs and Mitigation Measures VEG-1a (Conduct biological monitoring and reporting), VEG-1b (Prepare and implement worker environmental awareness program), VEG-1c (Minimize native vegetation and habitat loss), VEG-1d (Restore or revegetate temporary disturbance areas), VEG-1e (Compensate for permanent habitat loss), VEG-2a (Prepare and implement and integrated weed management plan), VEG-3a (Impact minimization and no net loss for jurisdictional waters and wetlands), VEG-5b (Ensure MSHCP equivalency and consistency), AQ-1a (Control Fugitive Dust), AQ-1b (Control Off-Road Equipment Emissions), and WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits). The full text of the vegetation APMs and mitigation measures is presented in Section D.4. The full text of the air quality and water resources mitigation measures is presented in Sections D.3 and D.19, respectively. With implementation of the mitigation measures described above and in their respective Section D analysis, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be minor.

E.3.5 Biological Resources – Wildlife

Geographic Scope

The geographic scope for this cumulative analysis includes the entire extent of all wildlife communities and special-status wildlife species of the region (including their habitat and current active ranges) that could be adversely affected by construction and operation of the Proposed Project. This geographic scope is appropriate because it accounts for the cumulative degradation or loss of a particular wildlife community or special-status species of the region from the construction and operation of all other projects that have impacted or would result in a reasonably foreseeable impact to a given wildlife community or special-status species.

Cumulative Analysis

A wide variety of past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for wildlife resources within the cumulative analysis study area. Some examples of development projects that could combine to result in adverse cumulative effects to wildlife include: commercial and industrial development (including new warehouse construction) near Segments 1 and 2; the North-South Pipeline Project near Segments 1 through 3; several large residential developments near Segment 4; renewable energy and mining developments near Segment 6; and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of many past and present projects within the cumulative analysis study area have resulted in substantial changes to the wildlife communities of the region. Some types of past and present adverse effects to wildlife communities include disturbance from noise and vibration, lighting, dust, and vehicle traffic; loss or degradation of habitat; destruction of burrows or nests; and mortality of individuals. Indirect effects include introduction and spread of invasive species that compete with native species and cause habitat degradation or reduction of available food sources and increased predation due to certain habitat alterations (e.g., perch sites or "subsidies" for predators). Vegetation removal has caused both temporary and permanent loss of wildlife habitat along with the displacement and mortality of resident wildlife species that are poor dispersers, such as snakes, lizards, and small mammals. Construction of numerous past and present projects has also resulted in the temporary degradation of adjacent habitat value due to disturbance, noise, increased human presence, and increased vehicle traffic during construction.

The cumulative analysis study area includes several geographical and ecological zones (described above in Section E.3.4 and Section D.4). It traverses the San Timoteo Badlands in western Riverside County, the San Gorgonio Pass, and extends into the western Sonoran Desert. Collectively, these areas contain a diverse fauna that includes many rare, threatened, and endangered animals. In addition to the general ecological description, biological connectivity across the San Gorgonio Pass is important to wildlife populations in the San Bernardino and San Jacinto Mountains; and sand transported from the mountain canyons supplies desert dune wildlife habitat in the Coachella Valley. The Proposed Project also traverses two Multiple Species Habitat Conservation Plan (MSHCP) areas.

The habitats within the cumulative project study area support a wide variety of animals, such as insects, birds, small mammals, coyote, and deer. Ninety-six special-status wildlife species occur or may occur in the Proposed Project study area, including 12 species listed under the federal Endangered Species Act (ESA), California ESA, or both. The listed species are Casey's June beetle (*Dinacoma caseyi*; federal endangered), Sierra Madre (mountain) yellow-legged frog (*Rana muscosa*; federal and state endangered), desert tortoise (*Gopherus agassizii*; federal and state threatened), Coachella Valley fringe-toed lizard (*Uma inornata*; federal threatened and state endangered), Swainson's hawk (*Buteo swainsoni*; state threatened), bald eagle (*Haliaeetus leucocephalus*; federal and state protected and state endangered), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*; federal threatened and state endangered), southwestern willow flycatcher (*Empidonax traillii extimus*; federal and state endangered), little willow flycatcher (*E.t. brewsteri*; state endangered), least Bell's vireo (*Vireo bellii pusillus*; federal and state endangered), coastal California gnatcatcher (*Polioptila californica californica*; federal threatened), and Stephens' kangaroo rat (*Dipodomys stephensi*; federal endangered and state threatened).

Forty-five non-listed special-status wildlife species were observed during surveys and 26 additional special-status animals have a moderate or high potential for occurrence within the Proposed Project study area. These special-status wildlife species include: raptors (including golden eagles, kites, falcons, and hawks); burrowing owls; non-raptor birds (including herons, shrikes, larks, martins, sparrows, blackbirds, thrashers, chats, and warblers); several bat species; several small mammals (including rabbits, mice, rats, squirrels, badgers, ringtails, and desert kit fox); reptiles and amphibians (including toads, lizards, and snakes); and bighorn sheep.

Special-status species of note include: golden eagle (*Aquila chrysaetos*; federal and state protected), white-tailed kite (*Elanus leucurus*; state protected), burrowing owl (*Athene cunicularia*; CDFW Species of Special Concern), American peregrine falcon (*Falco peregrinus*; state protected), desert kit fox (*Vulpes macrotis arsipus*; state protected), and Nelson's bighorn sheep, non-peninsular population (*Ovis canadensis nelsoni*; state protected). The Proposed Project route passes through federally designated critical habitat[1] for coastal California gnatcatcher (*Polioptila californica californica*) in Segment 2. Critical habitat for two other listed wildlife species is found near the route, but not within the Proposed Project area. Critical habitat for San Bernardino kangaroo rat (*Dipodomys merriami parvus*) and Santa Ana sucker (*Catostomus santaanae*) are located in the Santa Ana River to the west and north and outside of the Proposed Project area in Segment 2. Critical habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*) is found within 200 feet of a proposed fiber-optic route, along San Timoteo Creek in Segment 3. The development of past residential, commercial, industrial, and infrastructure projects has led to increased mortality and a reduction in habitat for native fauna and the subsequent special-status classification of numerous species, including the examples listed above.

The species of concern and their associated habitats that are described above have been adversely affected by extensive past development in the region, and similar additional future development is expected to continue throughout the region. The types of adverse effects that have resulted from past and current projects in the cumulative analysis study area are expected to also result from construction and operation of future development projects. Some examples of cumulative projects in the region and selected key species that could be adversely affected by construction and operation of those projects include the following:

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1 Geographic areas designated by the United States Fish and Wildlife Service [USFWS] in Recovery Plans that contain features essential to conservation and recovery of threatened or endangered species.

- North-South Pipeline Project (coastal California gnatcatcher)
- Grand Terrace Town Square Master Development Plan (coastal California gnatcatcher)
- I-215/Barton Rd. Interchange Improvement Project (coastal California gnatcatcher)
- Summerwind Ranch at Oak Valley (southwestern willow flycatcher, least Bell's vireo, coastal California gnatcatcher, and Stephens' kangaroo rat)
- Fairway Canyon SCPGA (southwestern willow flycatcher, least Bell's vireo, coastal California gnatcatcher, and Stephens' kangaroo rat)
- Sunny-Cal Specific Plan (southwestern willow flycatcher, least Bell's vireo, coastal California gnatcatcher, and Stephens' kangaroo rat)
- Tournament Hills 1 & 2 (coastal California gnatcatcher and Stephens' kangaroo rat)
- Noble Creek Vistas (coastal California gnatcatcher and Stephens' kangaroo rat)
- Sundance (coastal California gnatcatcher and Stephens' kangaroo rat)
- Butterfield Specific Plan (coastal California gnatcatcher and Stephens' kangaroo rat)
- 100 kW photovoltaic array (Coachella Valley fringe-toed lizard and desert tortoise)
- Relocation of 32 wind turbines (Coachella Valley fringe-toed lizard and desert tortoise)
- Replacement of 33 existing wind turbines (Coachella Valley fringe-toed lizard and desert tortoise)
- 60-acre sand and gravel mine (Coachella Valley fringe-toed lizard and desert tortoise)
- Gated community of 1,560 dwellings and golf course in the City of Desert Hot Springs (Coachella Valley fringe-toed lizard and desert tortoise)
- Future 500 kV Transmission Line (all of the species listed above)
- Solar projects near Blythe and Desert Center (listed in Table E-1 under Regional Projects)

The location of the example cumulative projects listed above is shown on Figure E-1a. These projects within the region have adversely affected or could adversely affect the populations and habitats of the species of concern described in this section and in Section D.5.

Construction and operation of the Proposed Project would result in notable adverse effects to wildlife communities and special-status species. The Proposed Project's expected direct and indirect impacts to special-status wildlife during construction and operation would be similar to the wildlife impacts described above. Four federally or state-listed threatened or endangered animal species were documented within the Proposed Project study area during surveys: desert tortoise, least Bell's vireo, Stephens' kangaroo rat, and Swainson's hawk. Four additional listed species have a moderate or high potential for occurrence: western yellow-billed cuckoo, southwestern willow flycatcher, little willow flycatcher, and coastal California gnatcatcher. Listed species with a low potential to occur are Casey's June beetle, mountain yellow-legged frog, Coachella Valley fringe-toed lizard, and bald eagle. Take of listed species may result from Proposed Project activities. ESA Section 7 Consultation would be required for the Proposed Project's potential take of federally listed species, and CESA take authorization would be required for any take of state-listed species. Construction and operation of the Proposed Project could result in the direct mortality or the destruction of suitable habitat for numerous wildlife species, including the examples listed above. These potential adverse effects would combine with the adverse effects on wildlife resources from other projects within the cumulative projects study area to result in a cumulative adverse effect. All of the permanent adverse effects to wildlife resources that would result from construction activities would continue during operation of the Proposed Project. These permanent, operational adverse effects would combine with the potential adverse effects of other projects within the cumulative projects study area (including residential, commercial, industrial, infrastructure, energy production, and transmission projects) to result in a cumulative adverse effect to wildlife communities.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to wildlife resources that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to wildlife resources. The incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be notable.

Several of the adverse effects to vegetation resources, described above in Section E.3.4 and in Section D.4, also apply to wildlife resources. This is especially true of habitat-related adverse effects (e.g., vegetation removal). Direct loss of small mammals, reptiles, and other less mobile species could occur during construction and operation of the Proposed Project. Construction and operation of the Proposed Project could also result in an increase in accidental road kills due to increased vehicle traffic along the construction corridor. Other potential causes of wildlife mortality or injury include entrapment in trenches, pipes, or other supplies and equipment; drowning in stored water; poisoning by ingestion or exposure to stored or spilled chemicals; and displacement into unsuitable adjacent habitat.

Indirect adverse effects to wildlife include noise and vibration, dust, visual disturbance from increased human activity, and exhaust emissions from heavy equipment during construction could cause wildlife to avoid habitats adjacent to the construction sites. Construction could impact wildlife in adjacent habitats by interfering with breeding or foraging activities, altering movement patterns, or causing animals to temporarily avoid areas adjacent to the construction zone. Wildlife species are most vulnerable to construction-related disturbances during their breeding seasons. Disturbances from construction could result in nest, roost, or territory abandonment and subsequent reproductive failure if these disturbances were to occur during an affected species' breeding season. Wildlife "subsidies" such as food or water, could attract wildlife to the project area where they may be at increased risk of road strike or other injury or mortality. In addition, wildlife subsidies may attract predators such as ravens, coyotes, or feral dogs to the project area, where they may prey on other species, including special-status species. Vegetation removal and construction disturbance can also introduce or increase the spread of non-native plant species, causing wildlife habitat degradation.

The Proposed Project would upgrade and replace existing facilities (e.g., transmission structures and conductors) without substantially altering the overall numbers of towers or conductors. The project would not introduce new transmission facilities into a location where none existed previously. Therefore, collision and electrocution hazard conditions for the project are expected to be similar to existing conditions. The operation of the Proposed Project is not expected to interfere with the long-term movement of any native resident or migratory species. The Proposed Project involves the upgrade and replacement of existing facilities (e.g., structures, access roads, existing substation modifications, and staging areas); therefore, ecological connectivity conditions for the Proposed Project would be similar to existing conditions.

The severity of the Proposed Project potential adverse effects to wildlife resources, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of APMs and Mitigation Measures VEG-1a through VEG-1e and Mitigation Measure VEG-2a, which are described above in Section E.3.4 and in Section D.4. The severity of the Proposed Project potential adverse effects to wildlife resources would be further reduced through implementation of APMs and Mitigation Measures WIL-1a (Conduct pre-construction biological resources surveys); WIL-1b (Ensure wildlife impact avoidance and minimization); WIL-1c (Prepare and implement a nesting bird management plan); WIL-2a (Conduct desert tortoise surveys, monitoring, and avoidance); WIL-2b (Prepare and implement raven monitoring, management, and control plan); WIL-2c (Conduct surveys and avoidance for threatened or endangered riparian birds); WIL-2d (Conduct surveys and avoidance for Stephens' kangaroo rat); WIL-2e (Conduct surveys and avoidance for coastal California gnatcatcher); WIL-2f (Conduct surveys and avoidance for golden eagle); WIL-2g (Conduct surveys and avoidance for burrowing owl); WIL-2h (Conduct surveys and avoidance for special-status herpetofauna); WIL-2i (Conduct surveys and avoidance for bats); WIL-2j (Conduct surveys and avoidance for special-status small mammals); WIL-2k (Conduct surveys and avoidance for American badger, ringtail, and desert kit fox); and, WIL-3a (Evaluate bird collision risk and implement APLIC design guidelines). MSHCP participation (if SCE obtains PSE status) may result in additional measures to reduce the Proposed Project's adverse effects to these species. The full text of these APMs and mitigation measures is presented in Sections D.4 and D.5. With implementation of the mitigation measures described above and in Sections D.4 and D.5, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be minor.

E.3.6 Climate Change / Greenhouse Gas Emissions

As described in Section D.6, the climate change analysis for the Proposed Project considers cumulative global impacts related to greenhouse gas emissions and climate change. Therefore, please see Section D.6 for a more detailed discussion of potential cumulative impacts for climate change and greenhouse gas emissions.

Geographic Scope

Globally, greenhouse gas (GHG) emissions contribute, by their nature, on a cumulative basis to the adverse environmental impacts of global climate change. Because the primary environmental effect of GHG emissions would be to exacerbate global climate change and the numerous side-effects on the environment and humans, the area of influence for GHG impacts is global. However, those cumulative global impacts would be manifested as impacts on resources and ecosystems in California, as well as nationally.

Cumulative Analysis

Table D.6-1 (Summary of OEHHA Findings on Climate Change Indicators in California) in Section D.6 (Climate Change) describes climate change indicators in California, including documented impacts on terrestrial, marine, and freshwater biological systems, with resulting changes in habitat, agriculture, and food supply.

All projects described in Section E.2 (Cumulative Projects) would result in direct emissions of GHG over the lifetime of the projects. Some projects, such as the solar projects, would also produce electricity in a manner that avoids the GHG emissions normally associated with power plants over the lifetime of the projects. While each project's GHG emissions would be subject to State climate change programs including California's Cap-and-Trade Program and/or local air quality regulations, any increases in GHG emissions that occur in the project area would contribute to cumulative increases in global GHG emissions that could contribute to these effects.

Severity of Project Contribution to Cumulative Adverse Effects. The Proposed Project would generate GHG emissions through construction activities, routine inspection, operations, and maintenance over the life of the facilities. As discussed in Section D.6, the non-recurring construction emissions applied over the anticipated 30-year service life of the Proposed Project results in an average rate of roughly 1,600 metric tons of carbon dioxide equivalent (MTCO2e) per year. This level of amortized construction GHG emissions would be under the threshold level of 10,000 metric tons that applies to electric generating facilities for annual mandatory reporting of GHG (17 CCR 95101), and these emissions would also be below a threshold level of 10,000 metric tons that applies to annually recurring emissions (SCAQMD, 2011). In addition, GHG emissions during routine operations and maintenance would be well below the threshold for mandatory reporting and the SCAQMD threshold.

The indirect effects of the project on GHG emissions would primarily be due to changing the deliverability of electricity generation facilities. One of SCE's objectives for the Proposed Project is to "integrate and fully deliver the output of new generation projects located in the Blythe and Desert Center areas" some of which include renewable energy resources. The Proposed Project would improve the ability to deliver electricity from the existing and likely future renewable resources in the southeastern California desert to the Los Angeles basin. Power produced from the renewable resources and made deliverable by the project would reduce, displace, or eliminate emissions that would otherwise occur from other power generation facilities including fossil fueled-fired power plants. Delivering electricity to coastal loads would enable an indirect, unquantified reduction in GHG emissions from electricity generation there, primarily within the South Coast Air Basin.

Although the overall levels of GHG emissions caused by the Proposed Project during construction, operations and maintenance would not occur at levels requiring reporting or at levels exceeding any established threshold, cumulative emissions from the project would contribute to climate change effects described above and in Table D.6-1 (see Section D.6, Climate Change).

E.3.7 Cultural Resources

Geographic Scope

The geographic scope for this cumulative analysis includes all of the area that was analyzed for both direct and indirect effects under the Proposed Project. The geographic scope for direct effects to cultural resources from construction of the Proposed Project is the existing 220 kV ROW plus a 50-foot buffer around all other linear project components and the ground disturbance footprint of all non-linear project components, including staging areas and substations. The geographic scope for indirect effects to cultural resources from construction of the Proposed Project includes a 0.5-mile buffer around all direct effects study areas. This geographic scope is appropriate because it includes a large enough area to account for potential impacts to similar cultural resources from other projects in the cumulative projects study area, yet is focused enough to represent the Proposed Project's actual potential to combine with the impacts of other cumulative projects.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for cultural resources within the cumulative analysis study area. Examples of other projects that could result in adverse effects to cultural resources include commercial and industrial development (including new warehouse construction) near Segments 1 and 2, the North-South Pipeline Project near Segments 1 through 3, several large residential developments near Segment 4, renewable energy and mining developments near Segment 6, and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the cumulative analysis study area have resulted in substantial changes to the cultural resources of the region. Depending on the age and type of project, some past projects may themselves be counted as historic resources. Archival research indicated that a total of 87 surveys have been conducted within a half-mile of the Proposed Project route. Through archaeological survey and archival research, 325 cultural resources have been identified within approximately a half-mile of the Proposed Project. While not all of the cultural resources surveys represent projects that have been built, the projects that were built have likely resulted in an adverse effect to cultural resources. Disturbance or destruction of known historic resources is generally avoidable through project modification or implementation of mitigation. However, it is likely that some disturbance of historic resources in the region has occurred. Disturbance or destruction of previously unidentified buried cultural resources, including unknown or undiscovered human remains, is more difficult to avoid than known cultural resources. Past and present projects within the cumulative analysis study area have very likely disturbed or destroyed previously unidentified buried cultural resources. Typical activities that would result in the disturbance or destruction of buried cultural resources include grading, excavation, boring, trenching, and other types of sub-surface ground disturbance.

The current and reasonably foreseeable projects described above and in Table E-1 would generally include some amount of ground disturbance, including the types of sub-surface ground disturbance described above. These types of ground disturbance would affect cultural resources in the cumulative analysis study area in a similar manner as past activities. Construction and operation of the Proposed Project would result in minor adverse effects to known historic properties. Construction of the Proposed Project would involve ground disturbing activities such as vegetation removal, grading, trenching, boring, and excavation for new structure locations and transmission lines, access roads, pull sites, and substations. These ground disturbing activities could result in adverse effects to unknown or undiscovered buried cultural resources, including unknown or undiscovered human remains. Indirect impacts to cultural resources could also result from inadvertent or malicious vandalism or unauthorized collection of cultural resources on the surface of sites. The potential cultural resource adverse effects from construction and operation of the Proposed Project could combine with adverse cultural resources effects from other projects in the cumulative projects study area to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to cultural resources that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to cultural resources. However, the incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be minor. The loss of cultural resources is a concern in the project vicinity as these are not renewable resources and this is an area that is sensitive for prehistoric occupation. Inadvertent direct adverse effects may occur to known historic properties/historical resources as well as unknown buried cultural resources within the Proposed Project study area during construction through ground disturbing activities. Indirect adverse effects could also result from inadvertent or malicious vandalism or unauthorized collection of cultural resources on the surface of sites. The operation, maintenance, and restoration of the Proposed Project would result in similar but less severe adverse effects to cultural resources as would construction of the Proposed Project. Overall, construction and operation of the Proposed Project would result in minor adverse effects to cultural resources, and the incremental contribution of the Proposed Project to the substantial cumulative adverse effect would be similarly minor but not negligible.

The severity of the Proposed Project potential adverse effects to cultural resources, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of APMs as well as Mitigation Measures CL-1a (Avoid environmentally sensitive areas); CL-1b (Develop Cultural Resources Treatment Plan [CRTP]); CL-1c (Train construction personnel); CL-1d (Conduct construction monitoring); CL-2a (Treatment of previously unidentified cultural resources); and, CL-2b (Properly treat human remains). The full text of these APMs and mitigation measures is presented in Section D.7. With implementation of the mitigation measures noted above and described fully in Section D.7, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be negligible.

E.3.8 Socioeconomics and Environmental Justice

Geographic Scope

The geographic scope for the analysis of potential cumulative adverse effects for socioeconomics and environmental justice is a 3-mile buffer around all Proposed Project components, which is the same as the cumulative projects study area that is shown in Figure E-1a, Cumulative Projects. This geographic scope is appropriate because it is large enough to reflect regional impacts to socioeconomics and environmental justice, yet focused enough to represent the Proposed Project's actual potential to combine with the impacts of other cumulative projects.

Cumulative Analysis

Numerous past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for socioeconomics and environmental justice within the cumulative analysis study area. Some examples of other projects that could result in both adverse and beneficial effects to socioeconomics and environmental justice include commercial and industrial development (including new warehouse construction) near Segments 1 and 2, the North-South Pipeline Project near Segments 1 through 3, several large residential developments near Segment 4, renewable energy and mining developments near Segment 6, and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of many past and present projects within the cumulative analysis study area have resulted in substantial changes to the economic development of the region and the distribution of economic and environmental benefits and burdens. Past practices of zoning and land development have led to the formation of areas of concentrated wealth as well as areas with increased levels of poverty. Property values generally reflect the presence of environmental and socioeconomic amenities and burdens. For example, housing located in a desirable school district will generally cost more than comparable housing that is located in a less desirable school district. Conversely, housing located closer to a landfill will generally cost less than comparable housing located further away from refuse disposal sites. The uneven distribution of environmental and socioeconomic amenities and burdens is generally reflected in the median housing prices for the various communities and census tracts throughout the region.

Future patterns of zoning and land use development will likely be influenced by and generally conform to past patterns of zoning and land use development. The current and reasonably foreseeable projects described above and in Table E-1 would affect socioeconomics and environmental justice in the cumulative analysis study area in a similar manner as past activities. As described in Section D.8, construction and operation of the Proposed Project would not result in a substantial increase in population and would not displace any people or existing housing. Although the Proposed Project crosses several census tracts with a higher percentage of minority or low-income populations than the surrounding counties, project impacts would not fall disproportionally on minority or low-income populations. No perceptible change in property values overall is anticipated. Proposed Project effects on wages and public revenue would be beneficial. These potential socioeconomic and environmental justice effects of the Proposed Project could combine with the effects of other projects in the cumulative projects study area to result in beneficial cumulative effects. Although other projects in the cumulative analysis study area could result in adverse effects to socioeconomics and environmental justice, the Proposed Project was not found to result in any socioeconomic or environmental adverse effects and therefore would not combine with the adverse effects of other projects to result in a cumulative adverse effect to socioeconomics and environmental justice.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in beneficial effects to socioeconomics and environmental justice that would combine with the beneficial effects from construction and operation of other projects in the cumulative analysis study area to result in substantial beneficial effects to socioeconomics and environmental justice. However, the incremental contribution of the Proposed Project to these substantial cumulative beneficial effects would be minor. The Proposed Project was not found to result in adverse effects to socioeconomics and environmental justice, and construction and operation of the project would not combine with the adverse effects of construction and operation of other projects in the cumulative analysis study area to result in a cumulative adverse effect to socioeconomics and environmental justice. The size of the Proposed Project workforce would be very small compared to the total population in the project area. Proposed Project construction would occur largely within an existing ROW. No substantial increase in population would result and no people or existing housing would be displaced. Construction impacts would not fall disproportionately on minority or low-income populations and property values would not be perceptively affected. Construction of the Proposed Project would result in a beneficial effect for wages and public revenue, both directly for construction workers and indirectly for businesses that provide services to those construction workers. The incremental contribution of construction and operation of the Proposed Project to economic growth in the region would be minor.

No substantial adverse effects to socioeconomics and environmental justice were identified for construction and operation of the Proposed Project, and no mitigation is required. Construction and operation of the Proposed Project would result in minor beneficial effects for wages and public revenue, and the incremental contribution of the Proposed Project to the cumulative beneficial effect would be minor.

E.3.9 Geology and Soils

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with geology and soils is the area of ground disturbance for construction of the Proposed Project, the receiving waters downstream of project-related ground disturbance, and the contributing area upstream of those receiving waters. This geographic scope is appropriate because it accounts for potential cumulative adverse effects related to erosion and slope instability.

Cumulative Analysis

Potential adverse effects related to geology and soils can be roughly divided into two categories: geology and soil conditions that could adversely affect a project (such as seismic hazards and problematic soils), and project-related impacts to the surrounding geology and soil (such as erosion and slope instability). Impacts related to seismic hazards and problematic soils result from the geologic characteristics of an area and are generally unrelated to past, present, and reasonably foreseeable development projects and human activity. On the other hand, the cumulative conditions for erosion and slope instability are the result of many past, present, and reasonably foreseeable projects within the cumulative analysis study area. Some examples of development projects that could result in increased erosion or slope instability include commercial and industrial development (including new warehouse construction) near Segments 1 and 2, the North-South Pipeline Project near Segments 1 through 3, several large residential developments near Segment 4, renewable energy and mining developments near Segment 6, and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the study area have resulted in soil loss and the reconfiguration of slope steepness throughout the region. Earth movement, mass grading, excavation, boring, trenching, and vegetation clearance has resulted in exposed, loose, and unstable soils. Site preparation for numerous projects throughout the region (including residential development) has altered the length and angle of repose for many slopes in the cumulative analysis study area. These earth disturbing activities have generally been designed to prevent soil loss and slope instability. However, the combined effect of past and present ground disturbance has generally led to increased soil loss and slope instability in the region.

The current and reasonably foreseeable projects described above and in Table E-1 would affect soil loss and slope stability in the cumulative analysis study area in a similar manner as past activities. Earth movement and grading (such as that associated with the residential development projects near Segment 4) would lead to increased erosion and sedimentation. Linear projects, such as the North-South Pipeline Project and the Future 500 kV Transmission Line, would include less mass grading and more dispersed ground disturbance than the large residential projects. Linear projects would generally result in less erosion at any one location compared to more concentrated development (such as large residential development projects), but would still result in an overall increase in erosion at the watershed level. Construction and operation of the Proposed Project would result in minor adverse effects on slope stability and soil loss due to grading, excavation, and vegetation clearance. These potential adverse effects would combine with the adverse effects on soil loss and slope stability from other projects within the cumulative projects study area to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to soil loss and slope stability that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to soil and slope stability. However, the incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be minor. Construction activities for the project such as grading and excavation would cause ground disturbance and loosen soil which could trigger or accelerate erosion. The project would be required to obtain a NPDES permit, which would require that the applicant prepare and adhere to a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would require development and implementation of BMPs to identify and control erosion, which would reduce the potential for construction to trigger erosion. Portions of Segments 1 to 4 are underlain by the landslide prone San Timoteo Formation. Excavation and grading for tower foundations and work areas, and grading for new and modified access and spur roads could result in slope instability in these areas. Operation of the Proposed Project would not result in substantial increased erosion or slope instability. Overall, construction and operation of the Proposed Project would result in minor adverse effects to soil and slope stability, and the incremental contribution of the Proposed Project to the substantial cumulative adverse effect would be similarly minor but not negligible.

The severity of the Proposed Project potential adverse effects to soil and slope stability, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of Mitigation Measures G-2a (Conduct geotechnical surveys for landslides and unstable slopes) and WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits). The full text of these mitigation measures is presented in Sections D.9 and D.19, respectively. With implementation of the mitigation measures noted here and described in their respective Section D analysis, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be negligible.

E.3.10 Hazards and Hazardous Materials

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with hazards and hazardous materials is the area within approximately 3 miles of the Proposed Project, which is the same as the Cumulative Projects Study Area that is shown in Figure E-1a, Cumulative Projects. This geographic scope is appropriate because it accounts for the amount of hazardous materials that would be utilized for the construction of the Proposed Project, the likelihood of discovering contaminated soil within or near the project footprint, and the likely maximum distance of contaminate transport.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for hazards and hazardous materials within the cumulative analysis study area. Some examples of development projects that could result in accidental releases of hazardous materials or mobilization of contaminated soil include commercial and industrial development (including new warehouse construction) near Segments 1 and 2, the North-South Pipeline Project near Segments 1 through 3, several large residential developments near Segment 4, renewable energy and mining developments near Segment 6, and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the study area have resulted in the accidental release of hazardous materials and soil contamination. A review of hazardous material investigation and cleanup site databases from the Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) revealed that the majority of historic hazardous material releases have occurred within the western portion of the study area, near Segments 1 through 4. However, leaking underground storage tanks (USTs) have occurred throughout the entire study area. The majority of hazardous materials releases have been associated with commercial and industrial development. The former Norton Air Force Base, located within the cumulative analysis study area north of Segment 1, was classified as a federal Superfund cleanup site due to soil and groundwater contamination with multiple types of hazardous waste. Agricultural development in the area has led to the presence of residual pesticides and herbicides in the soil (DTSC, 2015; SWRCB, 2015).

The current and reasonably foreseeable projects described above and in Table E-1 would affect hazards and hazardous materials in the cumulative analysis study area in a similar manner as past activities. Many of the industrial developments near Segments 1 and 2 would involve the storage or use of hazardous materials, which could contaminate soil or groundwater. The residential developments near Segment 4 would involve the grading of large areas that could disturb previously unidentified contaminated soil. Construction of the future 500 kV transmission line would involve the use of heavy machinery and construction vehicles that could leak hazardous materials including gasoline and diesel fuel, engine oil, coolant, lubricants, and grease.

Construction of the Proposed Project could result in leaks and accidental spills of hazardous materials such as gasoline, diesel fuel, oil, lubricants, and solvents. In addition, although no known hazardous waste sites exist within 1,000 feet of the Proposed Project, construction activities could disturb previously unidentified contaminated soil, including residual pesticide and herbicide contamination from past agricultural activities. Operations and maintenance activities associated with the Proposed Project could result in spills and leaks of hazardous materials at the substations and along the transmission line. The storage of hazardous materials used for routine maintenance activities may occur at the substations where leaks and spills could also result in worker exposure and soil contamination. Because of the small amount of hazardous materials that would be stored and utilized for the Proposed Project and the low intensity and frequency of maintenance activities, any potential operational hazards and hazardous materials impacts would be very minor. These potential adverse effects would combine with the hazards and hazardous materials adverse effects from other projects within the cumulative projects study area to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects related to hazards and hazardous materials that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect. Construction and operation of the Proposed Project could result in the accidental release of hazardous materials or the mobilization of existing contaminated soils. Accidental releases of hazardous materials or disturbance of contaminated soil could result in adverse effects to construction workers, nearby residents, surface water, and groundwater resources. Overall, construction and operation of the Proposed Project would result in minor adverse effects related to hazards and hazardous materials, and the incremental contribution of the Proposed Project to the substantial cumulative adverse effect would be similarly minor but non-negligible.

The severity of the Proposed Project potential adverse effects related to hazards and hazardous materials, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of several hazards and hazardous materials mitigation measures that would require development of project-specific hazardous material prevention and protection plans, including: a Storm Water Pollution Prevention Plan; a Spill Prevention, Control, and Countermeasures Plan; an Emergency Response Plan; a Soil Management Plan; and a Hazardous Materials Business Plan. The full text of these mitigation measures is presented in Section D.10. With implementation of the mitigation measures described here and in Section D.10, the Proposed Project's incremental contribution to the hazards and hazardous materials cumulative adverse effect would be negligible.

E.3.11 Land Use and BLM Realty

Geographic Scope

The geographic scope for the analysis of cumulative land use impacts is the same as the geographic scope for land use analysis of the Proposed Project, which is limited to the work areas of the project (as described in Section B, Description of Proposed Project). This geographic scope is appropriate because any cumulative impact on land use would be geographically contiguous with the Proposed Project.

Cumulative Analysis

A wide variety of past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for land use in the region. The vast majority of the projects that were identified in the vicinity of the Proposed Project would not be geographically contiguous with the Proposed Project and therefore would not combine with the potential adverse effects of the Proposed Project to result in an adverse cumulative effect. Two exceptions include the North-South Pipeline Project where it crosses Segment 2 and the future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the region have resulted in substantial changes to land use (including residential, commercial, industrial, infrastructure, and energy production and transmission projects). These changes include the establishment and growth of incorporated cities throughout Riverside and San Bernardino Counties. Numerous infrastructure projects also traverse the region, including: highways, railroads, aqueducts, and pipelines. Land use zoning and land use conflicts are generally addressed at both the county and local levels. Additionally, several federal agencies have jurisdiction over land uses in the region (including the BLM and the USFS).

The current and reasonably foreseeable projects described above and in Table E-1, including the North-South Pipeline Project and the future 500 kV transmission line, would affect land use in the region in a similar manner as past activities. Population growth is expected to lead continued growth of cities and the infrastructure that serves those population centers. Construction and operation of the Proposed Project would occur largely within an existing utility corridor, and would not divide an existing community. The existing corridor traverses a wide range of uses, including but not limited to residential, commercial, agricultural, recreation, and open space land uses. The Proposed Project would lead to conversion of a small amount of agricultural land to non-agricultural uses (see Section D.2). Sections D.4 and D.5 discuss the Proposed Project's compatibility with applicable habitat conservation plans. Although a small portion of the Proposed Project would be located on Bureau of Land Management land, the project would not be located within a designated Desert Wildlife Management Area or Multiple Use Class designation. Because the Proposed Project would be constructed and operated largely within an existing utility corridor, construction and operation of the Proposed Project would not result in land use conflicts that would combine with the adverse effects on land use from other projects in the region to result in a cumulative adverse effect. Neither the North-South Pipeline Project nor the future 500 kV transmission line would divide an established community or substantially disrupt an existing or recently approved land use.

Severity of Project Contribution to Cumulative Adverse Effects. Construction of the Proposed Project would occur largely within an existing ROW and would not substantially conflict with locally adopted land use plans, policies, or regulations. The North-South Pipeline Project would be geographically contiguous with a small portion of Segment 2, and the future 500 kV transmission line would be geographically contiguous with the majority of the Proposed Project. The construction schedule for the North-South Pipeline Project could overlap with the construction schedule for the Proposed Project, and therefore potential disruptions to existing land uses from pipeline construction could combine with potential disruptions to existing land uses from construction of the Proposed Project to result in an adverse cumulative effect. The Proposed Project would cause minor disruptions to existing land uses. Existing structures and existing conductor would be removed and replaced within the existing ROW, except for an approximately 3-mile portion of Segment 5 on the Morongo reservation. Construction of the Proposed Project would temporarily disrupt some existing land uses, including recreation and agriculture, and would cause temporary adverse effects related to traffic, noise, and aesthetics. These temporary disruptions and adverse effects are discussed under their relevant issue area.

The severity of potential adverse effects to existing land uses from construction of the Proposed Project, as well as the incremental contribution of the Proposed Project to the cumulative adverse effect, would be reduced through implementation of Mitigation Measure LU-1a (Prepare construction notification plan), which would require preparation of a construction notification plan and a public notice mailer, placement of newspaper advertisements and public venue notices, and provision of a public liaison person and toll-free information hotline.

E.3.12 Mineral Resources

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with mineral resources is the area within approximately 3 miles of the Proposed Project components, which is the same as the Cumulative Projects Study Area that is shown in Figure E-1a, Cumulative Projects. This geographic scope is appropriate because it is large enough to reflect regional impacts to mineral resources, yet focused enough to represent the Proposed Project's actual potential to combine with the impacts of other cumulative projects.

Cumulative Analysis

Numerous past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for mineral resources within the cumulative analysis study area. Some examples of cumulative projects that could temporarily disrupt mineral extraction activities or permanently preclude the availability of mineral resources include a future 500 kV transmission line that would be contiguous with approximately 40 miles of the 45-mile project ROW, the North-South Pipeline Project, and several large residential developments surrounding Segment 4 of the Proposed Project, including:

- Summerwind Ranch at Oak Valley
- Fairway Canyon SCPGA
- Sunny-Cal Specific Plan
- Tournament Hills 1 & 2
- Noble Creek Vistas
- Sundance
- Butterfield Specific Plan

A list of all projects within 3 miles of the Proposed Project is provided in Table E-1. The location of these projects is shown on Figure E-1a.

The geographic scope of this cumulative analysis contains numerous active mining operations; the area is an important production region for sand and gravel resources. Construction and operation of many past and present projects within the cumulative projects study area (including residential, commercial, and industrial development projects) have led to the loss of availability of mineral resources. The County of Riverside Environmental Impact Report No. 521 states that "rapid urbanization in Riverside County produces intense competition for land, as well as increases the need for industrial commodities." That analysis further finds that "expanding urban areas typically force resource production away from its core." The expansion of urban cores within the cumulative analysis study area has led to the loss of availability of mineral resources. Based on the California Geological Survey 2012 report on Aggregate Sustainability in California, the permitted aggregate reserves in the region are not sufficient to meet the fifty-year demand for aggregate (sand and gravel). The past and continued loss of availability of mineral resources in the cumulative analysis study area contributes to the inability of permitted aggregate reserves to meet current and projected demand for those resources (County of Riverside, 2014b; CGS, 2012).

Construction of several cumulative projects (including the residential development projects listed above) would lead to the further expansion of urban areas in the region. This expansion would likely lead to the further loss of availability of additional mineral resources. Construction of the Proposed Project could temporarily disrupt sand and gravel mining operations at the Banning Rock Plant No. 66, which is located near the northeastern edge of the City of Banning. No other active mining operations would be affected by construction of the Proposed Project. As described in Section D.12, neither construction nor operation of the Proposed Project would lead to the permanent loss of availability of any known mineral resources. Because the Proposed Project would not lead to the loss of availability of known mineral resources, the potential adverse effects of the Proposed Project would not combine with the adverse effects on mineral resources from other projects within the cumulative projects study area to result in a cumulative adverse effect related to the permanent loss of availability of mineral resources. Construction of the Proposed Project would temporarily disrupt mineral resource extraction activities, and this adverse effect could combine with the temporary adverse effects on mineral resource extraction activities to result in a temporary cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction of the Proposed Project would temporarily disrupt sand and gravel mining operations at the Banning Rock Plant No. 66. This temporary disruption of mining operations could combine with the effects of other cumulative projects to result in a temporary, minor adverse cumulative effect. Operation of the Proposed Project would not result in the loss of availability of any mineral resource. The Proposed Project would be constructed, operated, and maintained within an existing ROW, and would not preclude the extraction of known mineral resources. Operation of the Proposed Project would have no impact on mineral resources and would not combine with any adverse effects associated with operation of other projects. No cumulative impact would occur as a result of operation of the Proposed Project.

The temporary adverse effects of the Proposed Project could combine with the impacts of other cumulative projects if those other projects resulted in the simultaneous disruption of other mineral resource extraction activities in the region. The severity of the Proposed Project temporary, adverse effects to mineral resource extraction, as well as the incremental contribution of the Proposed Project to the temporary, cumulative adverse effect, would be reduced through implementation of Mitigation Measure MR-1a (Coordinate with quarry operations), which would require SCE to consult with the mine's owners and operators prior to construction of the Proposed Project within the active mining area. With implementation of the mitigation measures described above and in Section D.12, the incremental contribution of the Proposed Project construction activities to the temporary, cumulative adverse effects on mineral resources would be negligible.

E.3.13 Noise

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with noise is the area within approximately 1 mile of the Proposed Project components, including the ROW and access roads. This geographic scope is appropriate because noise levels attenuate rapidly with distance and the noise generated by activities greater than 1 mile from the Proposed Project generally would not combine with the noise generated by project construction and operation.

Cumulative Analysis

A wide variety of past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for noise within the cumulative analysis study area. The types of projects that could combine to result in adverse cumulative effects to ambient noise levels include residential, commercial, industrial, infrastructure, and energy production and transmission projects. Some examples of these types of projects within the cumulative analysis study area include the following:

- Future 500 kV Transmission Line
- North-South Pipeline Project
- Redlands Distribution Center
- Hillwood Warehouse
- McShane Warehouse
- Redlands Fulfillment Center
- Middle School 5
- Grand Terrace Town Square Master Development Plan
- I-215/Barton Rd. Interchange Improvement Project
- Summerwind Ranch at Oak Valley
- Fairway Canyon SCPGA
- Sunny-Cal Specific Plan
- Tournament Hills 1 & 2
- Noble Creek Vistas
- Sundance
- Butterfield Specific Plan
- Cabazon Outlets expansion
- 100 kW photovoltaic array
- Relocation of 32 wind turbines
- Replacement of 33 existing wind turbines
- 60-acre sand and gravel mine

Construction and operation of numerous past and present projects within the study area have resulted in substantial changes to the ambient noise level of the surrounding area. Large highways, such as I-10 and State Route 60, convey heavy volumes of traffic through the region. March Air Reserve Base and the San Bernardino International Airport have brought commercial and military air traffic to the region. Residential development and the growth of incorporated cities have led to increased ambient noise levels, primarily as a result of vehicle traffic along local roads and highways. Numerous construction projects of all types have resulted in temporary increases in ambient noise levels throughout the region.

The current and reasonably foreseeable projects described above and in Table E-1 would affect ambient noise levels in the cumulative analysis study area in a similar manner as past activities. Commercial and industrial development (including warehouses near Segment 1) would bring increased truck traffic to the area. Residential development (including the large residential development projects near Segment 4) would temporarily raise ambient noise levels during construction from the use of heavy machinery and equipment. After construction, the residential developments would bring increased traffic to the area (including to previously undeveloped areas), which would permanently raise ambient noise levels. The sand and gravel mine near Segment 6 would raise ambient noise levels through the operation of heavy excavation equipment and potentially through blasting that may be required to mine the sand and gravel. Construction and operation of the Proposed Project would cause temporary localized increases in ambient noise levels. These increases in ambient noise levels could combine with the noise generated by other nearby activities to form an adverse cumulative impact.

Severity of Project Contribution to Cumulative Adverse Effects. Construction activities associated with the Proposed Project would occur between May 2016 and May 2020. These activities would create temporary elevated noise levels that could affect nearby sensitive receptors. Where construction activities for the Proposed Project and other projects in the cumulative analysis study area overlap both geographically and temporally, the noise-related adverse effects of the Proposed Project would combine with the noise-related adverse effects of the other cumulative projects to result in a substantial, temporary, adverse cumulative effect to nearby sensitive receptors. Due to the extended construction timeframe for the Proposed Project (approximately 36 to 48 months) and the resulting noise levels, the incremental contribution of the Proposed Project to the substantial, temporary, adverse cumulative effect would be substantial. Construction of the Proposed Project would result in increases to the ambient noise levels throughout the project area due to the use of heavy equipment such as drill rigs, cranes, trucks, graders, compactors, dozers, excavators, backhoes, and helicopters. Elevated noise levels would also occur due to operation of smaller equipment, such as light-duty vehicles, compressors, generators, and welders. Sensitive receptors for elevated noise levels near the Proposed Project include residences, schools, community parks, and other recreational uses. These sensitive receptors are described in Section D.13.1 (Noise). Construction noise associated with the Proposed Project would substantially disturb sensitive receptors located within 1,400 feet of construction activities.

The Proposed Project would introduce long-term sources of noise related to the audible corona effect of the 220 kV lines, which occurs with normal and routine operation. However, corona noise levels would not be above existing ambient noise levels for any segment of the Proposed Project. Similarly, routine inspection and maintenance activities would not adversely affect ambient noise levels. Although some of the cumulative projects listed above, such as the sand and gravel mine, would introduce substantial operational noise, the Proposed Project's incremental contribution to elevated long-term noise would be very minor. The future 500 kV transmission line would be geographically contiguous with the majority of the Proposed Project and would also introduce long-term sources of noise related to the audible corona effect of the lines. The corona noise resulting from the Proposed Project would combine with the corona noise from the future 500 kV transmission line, resulting in a substantial cumulative adverse effect.

The severity of the Proposed Project's potential adverse effects to ambient noise levels during construction, as well as the incremental contribution of the Proposed Project to the substantial, temporary, cumulative adverse effect for noise, would be reduced with implementation of Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy). The full text of these mitigation measures is presented in Section D.13. Even with implementation of the mitigation measures noted above and described in Section D.13, the incremental contribution of the Proposed Project due to construction noise to the substantial, temporary, adverse cumulative effect would remain substantial.

E.3.14 Paleontological Resources

Geographic Scope

The geographic scope for potential paleontological impacts of the Proposed Project includes areas of ground disturbance underlain by paleontologically sensitive geologic formations, including the San Timoteo Formation and older Quaternary alluvium. The geographic scope for potential cumulative effects includes geologic formations with similar paleontological sensitivity that are contiguous with or adjacent to the project area, including the San Timoteo Formation. This geographic scope is appropriate because these contiguous or adjacent geologic formations could contain similar paleontological resources.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for paleontological resources within the cumulative projects study area. Some examples of development projects that could combine to result in adverse cumulative effects to paleontological resources include the following:

- Future 500 kV Transmission Line
- North-South Pipeline Project
- Redlands Distribution Center
- Hillwood Warehouse
- McShane Warehouse
- Redlands Fulfillment Center
- Middle School 5
- Grand Terrace Town Square Master Development Plan
- Summerwind Ranch at Oak Valley
- Fairway Canyon SCPGA
- Sunny-Cal Specific Plan
- Tournament Hills 1 & 2
- Noble Creek Vistas
- Sundance
- Butterfield Specific Plan
- Cabazon Outlets expansion

Construction and operation of numerous past and present projects within the study area have resulted in discovery and disturbance of paleontological resources of the region. The results of the paleontological resources records searches revealed 8 previously recorded fossil localities within the Proposed

Project area and at least 50 additional fossil localities within approximately 1 mile of the Proposed Project area. In addition, the paleontological field reconnaissance survey identified 12 additional fossil localities in the vicinity of the Proposed Project area. All previously recorded localities are in the highly sensitive San Timoteo Formation and the moderately sensitive Quaternary Older Alluvium within or near Sections 2, 3, and 4. The San Timoteo Formation has yielded an abundant and diverse paleontological fauna that includes at least 30 mammalian and reptilian species. More than 1,700 fossils have been recovered from the deposits, including at least 1,450 specimens recovered during excavations related to the construction of SCE's El Casco Substation near Calimesa (LSA, 2012).

The current and reasonably foreseeable projects described above and in Table E-1 would affect paleontological resources in the cumulative analysis study area in a similar manner as past activities. Ground disturbance associated with the construction of various cumulative projects, including the residential, commercial, and infrastructure projects listed above, could lead to disturbance or destruction of important paleontological resources. The likelihood of an adverse cumulative effect on paleontological resources is increased when ground disturbance occurs within geologic areas of increased paleontological sensitivity, such as the San Timoteo Formation. It is anticipated that other projects within the cumulative projects study area would implement similar mitigation measures as the Proposed Project, which would reduce the likelihood of permanent adverse effects to paleontological resources. Even with incorporation of mitigation measures, there is a potential during excavation and mass grading activities to disturb, damage, or destroy fossils without first providing an opportunity to identify, study, or salvage those resources. The future 500 kV transmission line would be geographically contiguous with the majority of the Proposed Project and would introduce similar ground disturbance during construction. The same paleontologically sensitive geologic formations that underlie the Proposed Project would be located within the project area of the future transmission line. It is anticipated that the future 500 kV transmission line would implement similar mitigation measures as the Proposed Project, which would reduce the likelihood of permanent adverse effects to paleontological resources. As is the case with other cumulative projects, the adverse paleontological effects of the future transmission line would combine with the adverse paleontological effects of the Proposed Project to result in an adverse cumulative effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction of the Proposed Project could result in adverse effects to paleontological resources that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to paleontological resources. However, the incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be minor. The loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a substantial, permanent, adverse effect. In general, for Proposed Project areas which are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources.

The severity of the Proposed Project potential adverse effects to paleontological resources, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of Mitigation Measures PAL-1a (Inventory and evaluate paleontological Resources), PAL-1b (Develop Paleontological Resource Mitigation and Monitoring Plan), PAL-1c (Train construction personnel), PAL-1d (Monitor construction for paleontological resources), and PAL-1e (Final reporting and curation). The full text of these mitigation measures is presented in Section D.14. With implementation of the mitigation measures noted above and described fully in Section D.14, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be negligible.

E.3.15 Recreation

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with recreation includes the recreation facilities that would be traversed by or adjacent to the Proposed Project as well as the viewsheds of these affected recreation areas. This geographic scope is appropriate because it considers the effects of other projects within this region on the resources impacted by the Proposed Project.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for recreation resources within the cumulative analysis study area. Table E-1 lists projects that were identified for the cumulative analysis. The following projects are in close proximity to the Proposed Project and to recreational resources such that the construction and operation impacts could combine to result in a cumulative effect.

- Terrace View Elementary School Modernization Program
- Mountain View Marketplace Project
- Tournament Hills 1 & 2
- Noble Creek Vistas
- Relocation of 32 wind turbines
- I-215/Barton Rd. Interchange Improvement Project
- Fairway Canyon SCPGA Tract No 31462
- Oak Valley Senior Center
- 100 kW Photovoltaic Array

Construction and operation of numerous past and present projects within the study area have resulted in substantial changes to the recreation resources of the region. Residential development has led to an increase in the region's population that has placed additional demand on recreation resources, including open space. The construction of many residential, commercial, industrial, and infrastructure projects has resulted in temporary and permanent increases in traffic and the temporary closure of roadways and access points for recreation resources, including national forest land and state parks.

The current and reasonably foreseeable projects described above and in Table E-1 would affect recreation resources in the cumulative analysis study area in a similar manner as past activities. The cumulative projects that could impact these recreational facilities include large-scale residential development projects in the City of Beaumont that have not yet begun construction. Therefore, the construction of the cumulative projects could overlap with the construction of the Proposed Project. Residential and commercial development would have similar construction impacts as the Proposed Project: noise, dust, and an increase in traffic resulting in reduced or lost access. The cumulative projects could substantially impact access to recreation areas due to increased construction traffic or temporary road closures, effectively reducing the opportunities for recreation during the construction time frame. As a whole, they would result in a cumulative adverse effect to recreation for nearby residents. The Proposed Project would impact some recreational facilities that would also be impacted by cumulative projects, and the potential adverse effects of the Proposed Project would combine with the potential adverse effects on recreation resources from other projects within the cumulative projects study area to result in a cumulative adverse effect. Specifically, the following recreational resources are located near the Proposed Project and cumulative projects and could be affected by the construction of both:

- Sun Park
- Grand Terrace Senior Center Park
- Norton Younglove Preserve/Reserve
- Oak Valley Golf Club
- BLM land
- Cottonwood Park
- Rancho Mediterranean Park
- Cherry Valley Lakes RV Campground
- Noble Creek Regional Park

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to recreation resources that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to recreation resources. However, the incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be minor. Construction activities of the Proposed Project would occur between May 2016 and May 2020. They would create temporary nuisances such as noise, dust, and construction traffic as well as require the use of access roads and work areas near the ROW. The Proposed Project would result in minor impacts to recreation during operations. The project would replace three high-voltage towers with two towers, reducing the amount of land used for transmission. It would place one tower closer to the Pacific Crest Trail, but this would occur in an area where the PCT is in close proximity to a number of existing industrial structures so would not change the overall feel of the area. The Proposed Project would not permanently preclude recreational activities as it is replacing an existing line and the areas temporarily disturbed during construction would return to recreation after the construction ended.

The severity of the Proposed Project's potential adverse effects to recreation resources, as well as the incremental contribution of the Proposed Project to the substantial cumulative recreational impact, would be reduced with implementation of Mitigation Measures RC-1a (Coordinate construction schedule and activities with the authorized officer for the recreation area), R-1b (Coordinate construction schedule and activities with the authorized officer for the recreation area), and R-1c (Provide a temporary detour for Pacific Crest National Scenic Trail users). The full text of these mitigation measures is presented in Section D.15. With implementation of the mitigation measures noted above and described fully in Section D.15, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be negligible.

E.3.16 Transportation and Traffic

Geographic Scope

The geographic scope for this cumulative analysis includes the local and regional roadways and highways that would be crossed by the Proposed Project or utilized for transportation of project components. In general, the project's transportation and traffic adverse effects (such as lane closures) would diminish in severity with increased distance from project activities. Accordingly, greater weight is placed on cumulative projects that are located nearer to the Proposed Project.

Cumulative Analysis

Many past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for transportation and traffic within the cumulative analysis study area. Some examples of cumulative projects (such as residential, commercial, and industrial development projects) that could combine to result in adverse cumulative effects to transportation and traffic include the following:

- Future 500 kV Transmission Line
- North-South Pipeline Project
- Redlands Distribution Center
- Hillwood Warehouse
- McShane Warehouse
- Redlands Fulfillment Center
- Grand Terrace Town Square Master Development Plan
- I-215/Barton Rd. Interchange Improvement Project
- Summerwind Ranch at Oak Valley
- Fairway Canyon SCPGA
- Sunny-Cal Specific Plan
- Tournament Hills 1 & 2
- Noble Creek Vistas
- Sundance
- Butterfield Specific Plan
- Cabazon Outlets expansion
- 60-acre sand and gravel mine

Construction and operation of numerous past and present projects have resulted in substantial changes to the transportation network and the level of traffic within the study area. Adverse effects that have resulted from combined construction activities of past and present projects in the cumulative analysis study area include: unacceptable levels of service on roadways in the study area (including along State Route 60), conflicts with planned transportation projects, damage to roads in the study area, disruption to rail traffic or operations, and short-term elimination of parking spaces (County of Riverside, 2014c).

Reasonably foreseeable development in the region is described above and in Table E-1. The warehouses and other industrial developments near Segment 1 will increase truck traffic in the area. The residential development near Segment 4 will increase commuter traffic in the area as those new residents travel to and from work. The linear cumulative projects (including the North-South Pipeline Project and the Future 500 kV Transmission Line) will cross numerous roadways in the area and will lead to temporary road or travel lane closures and increased traffic from construction vehicles. Construction of the Proposed Project would result in adverse effects on transportation and traffic due to road or travel lane closures, increased construction-related traffic, and helicopter use. In addition, Proposed Project operations could affect aviation safety and activities associated with public airports. The presence of new towers or poles within 20,000 feet of San Bernardino International Airport and Banning Municipal Airport could potentially affect aviation activities because some towers or poles would extend through an imaginary surface extending outward and upward from the airport runways at a ratio of 100 to 1. This operational impact could combine with the operational impact of other cumulative projects, such as the future 500 kV transmission line. Where construction and operation of the Proposed Project occurs in the same area and at the same time as construction of other projects in the cumulative analysis study area, the combined effects of those projects and the Proposed Project would result in an adverse, temporary cumulative effect to transportation and traffic.

Severity of Project Contribution to Cumulative Adverse Effects. Construction of the Proposed Project would result in adverse effects to transportation and traffic that would combine with the adverse effects from construction of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to transportation and traffic. The incremental contribution of the Proposed Project to this cumulative adverse effect would be substantial. As described in Section D.16, construction of the Proposed Project would result in temporary road or travel lane closures, increased construction-related traffic, interference with emergency vehicle access, reduced access to adjacent properties, and nuisance caused by helicopter use. Without the implementation of appropriate mitigation measures, these adverse effects would be substantial.

The severity of the Proposed Project potential adverse effects to transportation and traffic, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of mitigation measures that would: require SCE to prepare construction transportation and traffic control plans; obtain encroachment permits; restrict lane closures; minimize disruption of bus and transit service; ensure pedestrian and bicycle circulation and safety; provide access to adjacent properties; avoid conflicts with planned transportation improvements; repair roadways damaged by construction activities; obtain and comply with railroad permits; notify the public of short-term elimination of parking spaces; prepare and implement a helicopter use plan; and, comply with FAA hazard and airport safety requirements. The full text of these mitigation measures is presented in Section D.16. With implementation of the mitigation measures described above and in Section D.16, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be minor.

E.3.17 Utilities and Public Services

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with utilities and public services is the service area of the cities, counties, State, and federal lands traversed by the Proposed Project. Because the Proposed Project traverses unincorporated land in both San Bernardino and Riverside County, the geographic scope for this analysis includes both of those counties. However, the demand that would be placed on utilities and public services by construction and operation of the Proposed Project would diminish considerably with increased distance from the project. Therefore, potential cumulative impacts on utilities and public services are analyzed with increased importance placed on other projects that are nearer to the Proposed Project.

Cumulative Analysis

Numerous past, present and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for utilities and public services within the cumulative analysis study area. In general, residential development places the greatest demand on public services and utilities (including fire and police protection, emergency medical services, schools, parks, water and wastewater services, electricity and natural gas delivery, and waste disposal services). However, other types of development (including commercial and industrial development projects) also place additional demand on public services and utilities. Some examples of development projects that could combine to result in adverse cumulative effects to utilities and public services include several large residential developments along Segment 4, which are listed here:

- Summerwind Ranch at Oak Valley
- Fairway Canyon SCPGA
- Sunny-Cal Specific Plan
- Tournament Hills 1 & 2
- Noble Creek Vistas
- Sundance
- Butterfield Specific Plan

Construction and operation of many past and present projects within the cumulative study area have resulted in substantial changes to the demand for public services and utilities in the region. The most obvious sources of increased demand on public services are past and present residential development projects. Residential development projects generally coincide with population growth and are mainly located within the incorporated cities in the study area, which are described in Section D.17. Population growth and the attendant increase in housing development are analyzed within the general plans of the incorporated cities in the study area. Regional population growth and residential development are analyzed within the general plans for Riverside and San Bernardino Counties. These general plans include goals and policies to maintain adequate public services and utilities such that population growth and residential development are anticipated and accompanied by a commensurate increase in public services.

For example, the 2006 General Plan for the City of Banning includes the following Land Use Element goal: "Sufficient and appropriately located public facilities to serve the needs of the City's residents, businesses and visitors." The Community Development Element in the 2007 General Plan for the City of Beaumont contains a similar goal: "The City of Beaumont will continue to provide for the development and maintenance of critical public facilities and services to ensure that existing needs and future demands can be met." The example goals provided here are typical of goals and policies contained within general plans throughout the region. Thus, it is assumed that the planning process at both the county and city level is designed to anticipate and accommodate increases in demand for public services and utilities (City of Banning, 2006; City of Beaumont, 2007).

The current and reasonably foreseeable cumulative projects (including the residential development projects listed above) would increase the demand for public services and utilities. However, as described above, this future increase in demand for services would be anticipated and accommodated through implementation of the goals and policies contained in city and county general plans. Construction of the Proposed Project would result in a minor increase in demand for utilities and public services, such as police and fire protection. SCE estimates a peak daily workforce of approximately 340 workers. Some of this workforce would be drawn from existing SCE staff in the project area, thus reducing the influx of construction workers to the area. The small additional demand that the Proposed Project would place on utilities and public services would combine with the demand placed on public services and utilities by other projects within the cumulative projects study area. However, the cumulative demand on public services and utilities would not result in an adverse effect because the increased demand would be anticipated and planned for in both local and regional planning processes.

Severity of Project Contribution to Cumulative Adverse Effects. Several projects within the cumulative study area, including the residential development projects listed above, would place a substantial additional demand on utilities and public services. The combined demand placed on utilities and public services from all of the projects within the cumulative projects study area would likely exceed existing capacity. However, this adverse cumulative effect could be prevented through adequate city and regional planning. The incremental contribution of the Proposed Project to this potential adverse cumulative effect would be very minor. Due to the temporary nature of the Proposed Project construction (36 to 48 months) and the small number of workers that would relocate to the area during project construction, no expansion of schools, hospitals, fire stations, or police stations would be required.

Construction of the Proposed Project could impede or delay emergency response within the project area due to road closures, the use of fire roads and remote access roads, and the potential obstruction of various entrances and pathways throughout the project area. Because the Proposed Project is an upgrade of existing facilities, the impacts of the Proposed Project during operations and maintenance are anticipated to be the same as or substantially similar to the baseline. This is because operations and maintenance would require a similar amount of workforce and a similar need for public services and utilities. Overall, construction, operation, and maintenance of the Proposed Project would result in very minor adverse effects to public services and utilities, and the incremental contribution of the Proposed Project to the potential cumulative adverse effect similarly would be very minor.

The severity of the Proposed Project potential adverse effects to public services and utilities, as well as the incremental contribution of the Proposed Project to the potential cumulative adverse effect, would be reduced through implementation of Mitigation Measure T-1b (Prepare traffic control plans), which would include measures to avoid disruptions or delays in access for emergency service vehicles and to keep emergency service agencies fully informed of road closures, detours, and delays. Construction of the Proposed Project would temporarily increase demand on water supply utilities. Implementation of

Mitigation Measure UPS-1a (Use non-potable water for construction purposes), which would require SCE to use non-potable water for dust control and soil compaction, would reduce the severity of this adverse effect. The full text of these mitigation measures is presented in Section D.17. With implementation of the mitigation measures described above and in Section D.17, the incremental contribution of the Proposed Project to the potential adverse cumulative effect would be negligible.

E.3.18 Visual Resources

Geographic Scope

The geographic scope for the analysis of cumulative impacts associated with visual resources includes both local and regional viewsheds. Local cumulative effects occur within the immediate Proposed Project viewshed (projects, activities, and landscapes visible within the same field of view as the Proposed Project) and would generally be visible along the Proposed Project ROW and from nearby residential, commercial, and recreational areas; open space; roads; and major transportation corridors (I-10). Regional cumulative effects occur when viewers perceive that the general visual quality or landscape character of a regional area (e.g., along the I-10 travel corridor) is diminished by the proliferation of visible similar structures or construction effects, even if the changes are not within the same field of view as existing or known future structures or facilities. The result is a perceived "industrialization" or "urbanization" of the existing landscape character. In this case, the geographic scope for regional cumulative effects consisted of the I-10 corridor extending beyond the viewshed of the Proposed Project.

Cumulative Analysis

A wide variety of past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for visual resources within the cumulative analysis study area. Table E-1 lists 86 projects that were identified for the cumulative analysis. Of the 86 projects, seven urban development projects in the Moreno Valley Area (IDs 25 and 30 through 35) would not be located within the Proposed Project viewshed, would not contribute either to local or regional cumulative effects (in conjunction with the Proposed Project), and are not considered further. Of the remaining 79 cumulative projects, 74 projects would be urban development projects that would not exhibit visual characteristics similar to the Proposed Project. These urban development projects may, in combination with the Proposed Project, contribute to cumulative construction impacts (discussed below) but would not result in cumulative operational impacts in conjunction with the Proposed Project because the casual observer would not perceive any type of visual association or comparability between the urban development projects and the proposed transmission line.

The remaining five cumulative projects consist of two solar energy projects (IDs 69 and 80), two wind energy projects (IDs 70 and 72), and one potential future transmission line project (no ID#). The two solar energy and two wind energy projects have the potential to result in both cumulative construction and cumulative operational impacts and are discussed below. The potential future transmission project does not have the potential to cause cumulative construction impacts but does have the potential to result in cumulative operational impacts, as discussed below.

None of the five cumulative energy projects would, in conjunction with the Proposed Project, result in regional cumulative effects because: (1) the Proposed Project would replace existing facilities in an existing corridor (there would be no perceived proliferation or expansion of additional energy facilities within the I-10 landscape) and (2) all of the identified cumulative energy projects would be located within the project's local viewshed, and any resulting cumulative effects would be local.

Construction and operation of numerous past and present projects within the study area have resulted in substantial changes to the visual quality and landscape character of the region. Residential, commercial, industrial, infrastructure, and energy production and distribution projects have altered the landscape character of the San Bernardino Valley and the San Gorgonio Pass. Largely within the last century, these areas transitioned from sparsely populated open space and wilderness to a more urbanized and industrialized landscape.

The current and reasonably foreseeable projects described above and in Table E-1 would affect visual resources in the cumulative analysis study area in a similar manner as past activities, although the nature and severity of the potential adverse effects would be different than the adverse effects of past projects due to the different baseline conditions. These projects would add to the existing urban and industrial character of the landscape, but would not result in cumulative operational impacts in conjunction with the Proposed Project because the casual observer would not perceive any type of visual association or comparability between the urban development projects and the proposed transmission line.

Severity of Project Contribution to Cumulative Adverse Effects. The severity of the cumulative adverse effects is discussed below for both construction and operation of the Proposed Project combined with the construction and operation adverse effects of other projects within the cumulative analysis study area.

Construction Impacts. Construction of the Proposed Project was found to have an incremental contribution to cumulative effects on visual resources. If construction at any of the 74 cumulative urban development projects, two solar energy projects, or two wind energy projects were to occur at the same time as, or consecutively before or after, construction of the Proposed Project, construction-related activities, equipment, vehicle traffic, fugitive dust, land scarring, vegetation removal, and night lighting from these sites could visually combine with similar activities, equipment, and results at the Proposed Project sites. While it cannot be known at this time if construction of any of the cumulative projects would actually occur during construction of the Proposed Project, it can be said that concurrent construction of the Proposed Project and any of the other cumulative projects in the local viewshed would lead to the continued or expanded presence and visibility of construction-related effects in the landscape and local project region for potentially several years, resulting in a cumulatively adverse visual effect. In the case of vegetation removal, land scarring, construction marking of natural features, and night lighting effects, the cumulatively adverse visual effects would be substantial if visible to sensitive viewing populations and would require the effective application of mitigation measures to minimize vegetation removal, minimize night lighting, and reduce visual contrast.

Operational Impacts. Of the five local energy projects identified as sharing at least some similar visual characteristics of the Proposed Project, the two solar energy projects and two wind energy projects would be located in the eastern portion of Segment 6. While the two solar projects would exhibit a relatively low horizontal structural orientation that would be dissimilar to the prominent vertical structural character of the Proposed Project, they would present similar complex structural design and industrial surface characteristics. It is also likely that the solar projects would incorporate some prominent vertical elements in the form of gen-tie or collector facilities. In contrast, the two wind projects would present as prominent vertical features with industrial character similar to the Proposed Project structures. However, the cumulative contribution associated with the incremental change of the two wind projects would be substantially lessened because both projects represent either the relocation or replacement of wind energy developments already present in the landscape. Also, and particularly important in this case, the two solar energy and two wind energy projects would be situated in a landscape containing numerous, visually prominent, existing wind energy and transmission facilities, the presence of which would substantially lessen the visual prominence of the Proposed and cumulative projects. Therefore, the cumulative effect of the two solar projects and two wind projects considered collectively in combination with the Proposed Project would be adverse but minor.

Future 500 kV Transmission Line. In contrast to the solar energy and wind energy cumulative projects, one cumulative energy project – the potential future 500 kV transmission line – would be co-located adjacent to the Proposed Project throughout Segments 2 through 6. Unlike the Proposed Project, the future 500 kV transmission line would consist of tubular-steel poles (TSPs) rather than lattice-steel structures. Although the 500 kV transmission line would exhibit a simpler design character compared to the complex structural appearance of the Proposed Project's lattice-steel design (except in Segment 5 where the Proposed Project would also utilize tubular steel structures), the 500 kV structures would typically be noticeably taller (200' height compared to 148' average height for the Proposed Project except in Segment 5). The 500 kV structures would also appear more massive, which along with their greater height, would contribute to their more prominent visibility at greater viewing distances.

To a significant degree, the future 500 kV line's contribution to cumulative visual effects is largely determined by the local landscape characteristics and viewing circumstances, which vary for each route segment the 500 kV line would be located in, and can generally be defined as follows:

- Segment 2 – Ridgeline suburban residential
- Segment 3 – Ridgeline rural residential
- Segment 4 – Suburban residential
- Segment 5 – Undeveloped open space
- Segment 6 – Rural residential

The following paragraphs summarize the future 500 kV line's contribution to cumulative effects by route segment and refer to both the representative visual simulations of the Proposed Project and cumulative scenario in each segment.

Segment 2. Figures D.18-9A and D.18-9B (in Section D.18) present a representative existing view and Proposed Project simulation (respectively) in Segment 2, as viewed from KOP 2 on Canyon Vista Drive. As previously described, the Proposed Project would result in the replacement of one of three existing transmission lines with taller, double-circuit lattice structures of similar design. The incrementally taller structures would exacerbate structure skylining (extending above the horizon) but appear similar in overall structural complexity and prominence compared to the existing conditions. The overall visual effect would be adverse but less than substantial.

Figure E-3a presents a visual simulation of the addition of the potential future 500 kV transmission line to the Segment 2 ROW, also viewed from KOP 2. With the addition of the 500 kV line, structural diversity (and contrast) would increase, and asynchronous conductor spans become more noticeable, increasing overall structural complexity and clutter and visual contrast within the ROW. Although not readily apparent in the view from KOP 2 (due to the more distant 500 kV TSP location in this case), the 500 kV TSP structures generally appear noticeably taller, more massive, and visually prominent from various viewing opportunities along Segment 2 and from the extended viewshed north to I-10. Overall, the 500 kV line in combination with the Proposed Project would result in an increase in structural complexity and industrial character that would be noticeable to the sensitive residential viewing populations along Segment 2. The resulting cumulative visual change would be adverse and substantial requiring effective implementation of Mitigation Measures VR-9a (Project Design) and VR-10a (Surface Treatment).

Segment 3. Figures D.18-11A and 11B present a representative existing view and Proposed Project simulation (respectively) in Segment 3, as viewed from KOP 4 on San Timoteo Canyon Road. As previously described, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit lattice structures of identical design. Due to lower positions on the hill slopes, the taller structures of the Proposed Project would not cause noticeably increased skylining and would not appear more prominent to the casual observer. Also, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous conductor spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. The overall visual effect would be slightly improved over the existing conditions.

Figure E-3b presents a visual simulation of the addition of the potential future 500 kV transmission line to the Segment 3 ROW, also viewed from KOP 4. With the addition of the 500 kV line, structural diversity (and contrast) increases, and asynchronous conductor spans become more noticeable, increasing overall structural complexity and clutter and visual contrast within the ROW. The 500 kV TSP structures also appear noticeably taller, more massive, and visually prominent from various viewing opportunities within San Timoteo Canyon. When combined with the improved visual conditions of the Proposed Project, the adverse visual change associated with the addition of the 500 kV line is somewhat attenuated. The resulting overall cumulative visual change would be adverse but less than substantial when compared to the existing visual conditions caused by the three existing disparate transmission lines in the Segment 3 ROW. This minor adverse effect would be further reduced through implementation of Mitigation Measures VR-9a (Project Design) and VR-10a (Surface Treatment).

Segment 4. Figures D.18-14A and 14B present a representative existing view and Proposed Project simulation (respectively) in Segment 4, as viewed from KOP 7 at the Solera Oakmont Clubhouse parking lot. As previously described, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit lattice structures of identical design. The taller structures of the Proposed Project would cause slightly increased skylining and would appear more visually prominent to the casual observer. However, from within and north of the ROW, the reduction in the overall number and types of structures would slightly reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. The overall visual effect for most viewing locations would be slightly improved over the existing conditions. However, as previously noted, some views south of the ROW would experience Moderate or Moderate-to-High levels of visual change. Figure E-3c presents a visual simulation of the addition of the potential future 500 kV transmission line to the Segment 4 ROW, also viewed from KOP 7. With the addition of the 500 kV line, structural diversity (and contrast) increases, and asynchronous conductor spans become more noticeable, increasing overall structural complexity and clutter and visual contrast within the ROW. The 500 kV TSP structures also appear noticeably taller, more massive, and visually prominent from various viewing opportunities along Segment 4. However, when combined with the slightly improved visual conditions of the Proposed Project, the adverse visual change associated with the addition of the 500 kV line is somewhat attenuated. As a result, when viewing from most locations north of, within, or south of the ROW, the resulting overall cumulative visual change (from the combination of the Proposed Project and future 500 kV line) would be adverse but less than substantial when compared to the existing visual conditions caused by the three existing disparate transmission lines in the Segment 4 ROW. For those relatively few viewing locations south of the ROW that would experience Moderate to High visual change from the Proposed Project, the resulting cumulative visual change (with addition of the 500 kV line) would also be adverse and substantial. In all cases, Mitigation Measures VR-9a (Project Design) and VR-10a (Surface Treatment) would be required to reduce the adverse visual effects to the extent feasible.

This image presents a **Visual Simulation** of the **Proposed Project plus a Future 500 kV Transmission Line** (cumulative project) from **KOP 2** on **Canyon Vista Drive**. This simulation illustrates the addition of a future 500 kV tubular steel pole transmission line between two existing transmission lines in the West of Devers corridor, which passes along the ridge to the south of the subdivision. The 500 kV structures would be noticeably taller and would appear somewhat more massive compared to the lattice structures.	**KOP 2** **Canyon Vista Drive** **Cumulative Simulation**	**SCE West of Devers Upgrade Project** **CEQA EIR / NEPA EIS** **Visual Resources** **Figure E-3a**

This image presents a **Visual Simulation** of the **Proposed Project plus a Future 500 kV Transmission Line** (cumulative project) from **KOP 4** on **San Timoteo Canyon Road,** approximately 0.70 mile east of Redlands Boulevard. This simulation illustrates the addition of a future 500 kV tubular steel pole transmission line adjacent and to the southwest of the Proposed Project in the existing ROW. The 500 kV structures would be noticeably taller and would appear somewhat more massive compared to the lattice structures.	**KOP 4** **San Timoteo Canyon Road** **Cumulative Simulation**	**SCE West of Devers Upgrade Project** **CEQA EIR / NEPA EIS** **Visual Resources** **Figure E-3b**

This image presents a **Visual Simulation** of the **Proposed Project plus a Future 500 kV Transmission Line** (cumulative project) from **KOP 7** at the **Solera Oakmont Clubhouse,** in the City of Beaumont. This simulation illustrates the addition of a future 500 kV tubular steel pole transmission line adjacent and to the north of the Proposed Project in the existing ROW. The 500 kV structures would be noticeably taller and would appear somewhat more massive compared to the lattice structures of the Proposed Project.	**KOP 7** **Solera Oakmont Clubhouse** **Cumulative Simulation**	**SCE West of Devers Upgrade Project** **CEQA EIR / NEPA EIS** **Visual Resources** **Figure E-3c**

Segment 5. Figures D.18-19A and 19B present a representative existing view and Proposed Project simulation (respectively) in Segment 5, as viewed from KOP 12 at the Morongo Community Center. As previously described, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two double-circuit TSP lines of identical design in a new ROW to the south, which would be farther away from the Community Center and closer to I-10. Although the proposed TSPs would be taller than two of the replaced transmission lines and similar in height to the third, they would not appear taller compared to the existing structures because of their more distant location relative to the Community Center. However, there would be substantially more structures apparent in the field of view from KOP 12 because of the east-west orientation of the new ROW. The resulting overall visual change associated with the Proposed Project would be adverse but less than substantial when viewed from KOP 12.

Figure E-3d presents a visual simulation of the addition of the potential future 500 kV transmission line to the new Segment 5 ROW, also viewed from KOP 12. With the addition of the 500 kV line, industrial character and structural diversity (and visual contrast) would increase slightly. Also, due to airspace restrictions, the somewhat more massive 500 kV TSPs would have limited structure heights similar to the 220 kV TSPs, thereby necessitating shorter conductor spans and more structures than might otherwise be necessary. The shorter conductor spans would appear asynchronous relative to the 220 kV conductor spans, which would increase overall structural complexity, clutter, and visual contrast within the ROW. However, these negative visual changes would be partially offset by the shared TSP design similarities between the 220 kV and 500 kV TSPs. As a result, when viewing from the Morongo Community Center, the resulting overall cumulative visual change (from the combination of the Proposed Project and future 500 kV line) would be adverse but less than substantial when compared to the existing visual conditions caused by the three existing disparate transmission lines in the existing Segment 5 ROW, which is also closer to the Community Center. This minor adverse effect would be further reduced through implementation of Mitigation Measures VR-9a (Project Design) and VR-10a (Surface Treatment).

Segment 6. Figures D.18-20A and 20B present a representative existing view and Proposed Project simulation (respectively) in Segment 6, as viewed from KOP 13 on Haugen-Lehman Way in the Community of Whitewater. As previously described, the Proposed Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit lattice structures of identical design. The taller structures of the Proposed Project would cause slightly increased skylining and would appear more visually prominent to the casual observer. However, the reduction in the overall number and types of structures would slightly reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. The overall visual change would be slightly improved over the existing conditions.

Figure E-3e presents a visual simulation of the addition of the potential future 500 kV transmission line to the north side of the Segment 6 ROW, also viewed from KOP 13. With the addition of the 500 kV line, structural diversity (and contrast) increases, and asynchronous conductor spans become more noticeable, increasing overall structural complexity and clutter and visual contrast within the ROW. The 500 kV TSP structures also appear noticeably taller, more massive, and visually prominent from various viewing opportunities along Segment 6. However, when combined with either the slightly improved or adverse but less than substantial visual conditions of the Proposed Project, the adverse cumulative visual change associated with the addition of the 500 kV line would be less than substantial when compared to the existing visual conditions caused by the three existing disparate transmission lines in the Segment 6 ROW. This minor adverse effect would be further reduced through implementation of Mitigation Measures VR-9a (Project Design) and VR-10a (Surface Treatment).

E.3.19 Water Resources and Hydrology

Geographic Scope

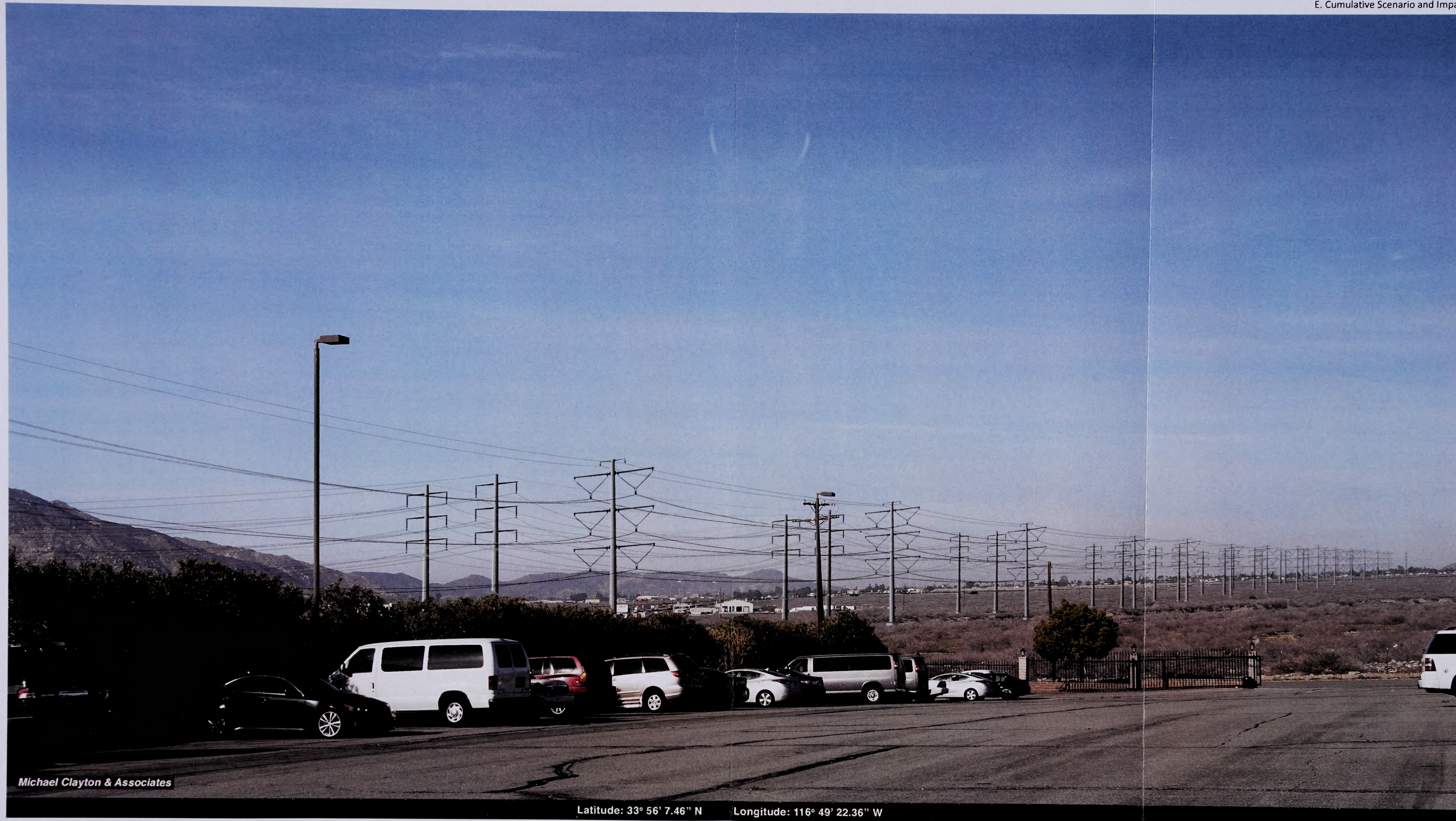
The geographic scope for this cumulative analysis includes the water resources that would be affected by the Proposed Project, as well as any downstream receiving water and upland contributing area related to those water resources. The National Hydrography Dataset (NHD) divides all of the surface area within the United States into nested, hydrologically defined units that each drain to a single point. The geographic scope for this cumulative analysis includes three large watersheds called Subbasins under the NHD: San Jacinto, Santa Ana, and Whitewater River. The San Jacinto and Santa Ana Subbasins are governed by the Santa Ana Regional Water Quality Control Board (RWQCB) and the Whitewater River Subbasin is governed by the Colorado River RWQCB. Although these Subbasins contain waterbodies that are not crossed or directly affected by the Proposed Project, they represent both the hydrologic and administrative units for water quality control and protection of beneficial uses through which the project would pass. In addition, these surface water Subbasins are underlain by several groundwater basins, as described in Section D.19. This geographic scope is appropriate because it includes a watershed-level analysis of potential cumulative adverse effects.

Cumulative Analysis

A wide variety of past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for hydrology and water quality within the cumulative analysis study area. Some examples of development projects that could combine to result in adverse cumulative effects to water resources include: commercial and industrial development (including new warehouse construction) near Segments 1 and 2; the North-South Pipeline Project near Segments 1 through 3; several large residential developments near Segment 4; renewable energy and mining developments near Segment 6; and a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the study area have resulted in substantial changes to the physical hydrology and water quality of the region. Although groundwater levels fluctuate over time, due in part to the amount of recharge entering the basin, residential and agricultural water use has generally led to reduced groundwater storage and availability. Land disturbance and earth movement, including grading and excavation, have led to increased erosion and sedimentation. Floodplain functions have been impaired through the placement of structures (such as housing) within floodplains and through the deliberate alteration of floodplain hydrology (including construction of dams, levees, and engineered channels). The creation of vast areas of impervious surface (including parking lots, roadways, and rooftops) has altered the rate and amount of surface water runoff in the study area. Improper handling, storage, and disposal of hazardous materials have led to contamination of surface water and groundwater resources.

The current and reasonably foreseeable projects described above and in Table E-1 would affect water resources in the cumulative analysis study area in a similar manner as past activities. Earth movement and grading (such as that associated with the residential development projects near Segment 4) would lead to increased erosion and sedimentation. Many of the cumulative projects would involve the storage or use of hazardous materials, which could contaminate surface water and groundwater. Some of the cumulative projects (including the residential development near Segment 4) could place structures in floodplains or require alteration of the floodplain (through levees or channel improvements) to prevent damage to structures. Construction and operation of the Proposed Project would result in minor



This image presents a **Visual Simulation** of the **Proposed Project plus a Future 500 kV Transmission Line** (cumulative project) from **KOP 12**, at the **Morongo Community Center**. This simulation illustrates the addition of a future 500 kV tubular steel pole transmission line adjacent and to the north of the Proposed Project in the proposed new ROW. The 500 kV structures would be approximately the same height as the 220 kV structures in Segment 5 due to airspace restrictions.

KOP 12
Morongo Community Center
Cumulative Simulation

SCE West of Devers Upgrade Project
CEQA EIR / NEPA EIS
Visual Resources
Figure E-3d

This image presents a **Visual Simulation** of the **Proposed Project plus a Future 500 kV Transmission Line** (cumulative project) from **KOP 13,** on **Haugen-Lehman Way**, just south of Amethyst Drive, in the residential community of Whitewater. This simulation illustrates the addition of a future 500 kV tubular steel pole transmission line adjacent and to the north of the Proposed Project in the existing ROW. The 500 kV structures would be noticeably taller and would appear somewhat more massive.

KOP 13
Haugen-Lehman Way
Cumulative Simulation

SCE West of Devers Upgrade Project
CEQA EIR / NEPA EIS
Visual Resources
Figure E-3e

adverse effects on water resources and hydrology due to water use and dewatering activities, the placement of structures in watercourses or flood hazard areas, increased erosion and sedimentation from ground disturbance, and the accidental spill or release of hazardous materials. These potential adverse effects would combine with the adverse effects on water resources from other projects within the cumulative projects study area to result in cumulative adverse effects.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to water resources that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to water resources. However, the incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be minor. Construction and operation of the Proposed Project would result in minor adverse effects related to increased erosion and sedimentation and the accidental spill or release of hazardous materials. As described in Section D.19, ground disturbance associated with the Proposed Project is expected to result in a minimal increase in runoff and little risk to water quality. The dry nature of most of the surface streams near the Proposed Project is such that should hazardous material spills occur during construction, these could easily be cleaned up prior to water being contaminated (because water is not generally flowing). Groundwater basins that underlie the Proposed Project generally have groundwater deeper than 60 feet, which in nearly all cases would be below the maximum depth of excavation. With shallow excavation and deeper groundwater, there is little likelihood that groundwater could be affected during construction. Overall, construction and operation of the Proposed Project would result in minor adverse effects to water resources, and the incremental contribution of the Proposed Project to the substantial cumulative adverse effect would be similarly minor but non-negligible.

The severity of the Proposed Project potential adverse effects to water resources, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of APMs and Mitigation Measures WR-2a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) and WR-3a (Implement flood, erosion, and scour protection for aboveground and belowground improvements). The full text of these APMs and mitigation measures is presented in Section D.19. With implementation of the mitigation measures described above and in Section D.19, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be negligible.

E.3.20 Wildland Fire

Geographic Scope

The geographic scope for this cumulative analysis includes the local, State, and federal/tribal jurisdictions responsible for fire protection that are crossed by the project. The geographic scope for this cumulative analysis is the same as for the Proposed Project, because the same fire departments and agencies that would respond to a wildland fire related to the Proposed Project would also respond to a wildland fire related to other cumulative projects in the area.

Cumulative Analysis

A wide variety of past, present, and reasonably foreseeable development projects contribute or would contribute to the cumulative conditions for wildland fire within the cumulative analysis study area. Some examples of development projects that could result in adverse effects related to wildland fires include: commercial and industrial development (including new warehouse construction) near Segments 1 and 2; the North-South Pipeline Project near Segments 1 through 3; several large residential developments near Segment 4; renewable energy and mining developments near Segment 6; and, a future 500 kV transmission line that would share approximately 40 miles of the 45-mile Proposed Project ROW.

Construction and operation of numerous past and present projects within the study area have resulted in an increased risk of wildfire as well as an increased need for protection from wildland fire. Population growth in the region has led to the development of several incorporated cities that are nearby or directly adjacent to wildlands, including the San Bernardino National Forest. These population centers have introduced vehicle and pedestrian traffic in the surrounding wildlands. Visitors to the wildland areas in the region have introduced several sources of wildfire ignition, including smoking, camping stoves, and campfires. In addition to being a source of wildfire ignition, these population centers also require fire protection during a wildfire. Housing that has been built close to wildland areas has increased the potential threat to property and human life from uncontrolled wildfire.

These current and reasonably foreseeable projects described above and in Table E-1 would affect wildland fire in the cumulative analysis study area in a similar manner as past activities. For example, the large housing developments near Segment 4 would increase the resident population near to the San Bernardino National Forest, which could increase visitation to the forest thus increasing sources of wildfire ignition. Those same housing developments would require protection from wildfire in the event of an uncontrolled fire in the surrounding wildlands. Construction and operation of the Proposed Project would result in minor adverse effects related to the increased probability of a wildland fire and the delay or obstruction of fire suppression efforts. These potential adverse effects could combine with the adverse effects on wildland fire probability and suppression from other projects within the cumulative projects study area to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would result in adverse effects to wildland fire that would combine with the adverse effects from construction and operation of other projects in the cumulative analysis study area to result in a substantial cumulative adverse effect to wildland fire potential and suppression capabilities. However, the incremental contribution of the Proposed Project to this substantial cumulative adverse effect would be minor. Where the Proposed Project ROW, existing substations, or construction yards are located in or near wildlands, project-related construction activities at these locations have the potential to be an ignition source for a wildland fire. Examples of ignition sources include sparks from welding or from metal striking metal or stone, which could ignite surrounding vegetation, parking vehicles over dry vegetation, where hot undercarriages could ignite grass or shrubs, and improperly discarded smoking materials. During operation of the Proposed Project, live transmission line that arcs to vegetation is a potential ignition source for a fire. Electrical arcing from power lines can be caused by high-voltage surges and spikes and from such events as a line failure due to a tree fall, the toppling of a pole, or a line breaking during a storm. Because the Proposed Project is an upgrade of existing facilities, the impacts of the Proposed Project during operations and maintenance are anticipated to be the same as or substantially similar to the baseline. This is because operations and maintenance would require a similar amount of workforce (with similar associated sources of wildland fire ignition) and would result in similar obstructions to fire suppression efforts (new structures would be located almost entirely within an existing ROW). Overall, construction and operation of the Proposed Project would result in minor adverse effects to wildland fire potential and suppression capabilities, and the incremental contribution of the Proposed Project to the substantial cumulative adverse effect would be similarly minor but non-negligible.

The severity of the Proposed Project potential adverse effects to wildland fire, as well as the incremental contribution of the Proposed Project to the substantial cumulative adverse effect, would be reduced through implementation of Mitigation Measure WF-1a (Prepare and implement a Fire Management Plan). This mitigation measure is fully described in Section D.20. With implementation of the mitigation measure noted above and described fully in Section D.20, the incremental contribution of the Proposed Project to the substantial adverse cumulative effect would be negligible.

E.3.21 Electrical Interference and Safety

Geographic Scope

The geographic scope for analysis of Proposed Project adverse effects related to electrical interference and safety is the ROW for the entire length of the 220 kV transmission line. The geographic scope for this cumulative analysis is the same as for the Proposed Project, but also includes projects immediately adjacent to the 220 kV ROW. This geographic scope is appropriate because electrical interference and electrical safety hazards attenuate rapidly with distance from the transmission line, and therefore these potential adverse effects would not combine with similar adverse effects from other projects that are not within or immediately adjacent to the Proposed Project ROW.

Cumulative Analysis

The past, present, and reasonably foreseeable projects that contribute or would contribute to electrical interference and electrical safety hazards within the cumulative analysis study area are limited generally to electrical transmission lines. Several transmission lines currently exist in the Proposed Project corridor, and these past projects contribute to the existing baseline for electrical interference in the study area. Other transmission lines in the region also create electrical interference, but those other regional transmission lines are outside of the cumulative analysis study area because electrical interference from transmission lines attenuates rapidly with distance and would not combine with the potential adverse effects of the Proposed Project. The only project within the cumulative projects study area that could combine with the Proposed Project to result in a cumulative adverse effect is the future 500 kV transmission line, which could result in an increase in electrical interference and electrical safety hazards. This cumulative analysis has determined that a future 500 kV transmission line is foreseeable, and therefore should be evaluated as a cumulative project in this EIS. The line would be built in SCE's existing ROW and along about 40 miles of the 45-mile project ROW. The future 500 kV line could be single-circuit or double-circuit, and for the purpose of this study, it is assumed to be a double-circuit line. Construction and operation of the Proposed Project would result in minor adverse effects related to electrical interference and electrical safety hazards. These potential adverse effects could combine with the adverse effects on electrical interference and safety from the future 500 kV transmission line to result in a cumulative adverse effect.

Severity of Project Contribution to Cumulative Adverse Effects. Construction and operation of the Proposed Project would cause changes in power line field strength as the locations of energized conductors would change during construction and in the final configuration of the transmission lines after construction is complete. These changes in field strength at the edge of the ROW could create: interference with radio, television, communications, or electronic equipment; hazards to the public from project-induced currents or shocks; and, interference with cardiac pacemakers. The only other project within the cumulative projects study area that could result in adverse effects related to electrical interference and safety is the future 500 kV transmission line. Although the future 500 kV transmission line would be geographically contiguous with the majority of the Proposed Project, the construction schedule for the future transmission line would not overlap with the construction schedule of the Proposed Project. Therefore, construction-related adverse effects to electrical interference and safety from the Proposed Project would not combine with construction-related adverse effects to electrical interference and safety from the future transmission line to result in a cumulative effect. However, the operational adverse effects of the future transmission line could combine with the operational adverse effects of the Proposed Project to result in a cumulative adverse effect. Overall, construction and operation of the Proposed Project would result in minor adverse effects related to electrical interference and safety, and the incremental contribution of the Proposed Project to the cumulative adverse effect would be similarly minor.

The severity of the Proposed Project potential adverse effects related to electrical interference and safety, as well as the incremental contribution of the Proposed Project to the cumulative adverse effect, would be reduced through implementation of Mitigation Measures EIS-1a (Limit the conductor surface gradient), EIS-1b (Document and resolve electronic interference complaints), and EIS-2a (Implement grounding measures). These mitigation measures are fully described in Section D.21. With implementation of the mitigation measures noted above and described fully in Section D.21, the incremental contribution of the Proposed Project to the adverse cumulative effect would be negligible.

E.4 Cumulative Impact Analysis of Alternatives

All of the retained alternatives are located in the same ROW as the Proposed Project and would involve similar types of construction activities. The same list of cumulative projects that could potentially combine with the Proposed Project to result in a cumulative adverse effect would also apply to all of the retained alternatives. Therefore, the cumulative analysis presented above for the Proposed Project would also apply to all of the alternatives, and the adverse cumulative effects that are described for the Proposed Project would also occur with all of the alternatives.

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F. Other NEPA Requirements

Section F includes discussions of various topics required by NEPA that are not necessarily discussed elsewhere in the EIS. These topics include Section F.1, indirect effects, including growth-inducing effects; Section F.2, irreversible and irretrievable commitment of resources, including energy use; Section F.3, unavoidable adverse impacts; and Section F.4, relationship between short-term uses and long-term productivity of the environment with regard to the project. Section F.5 describes energy requirements and conservation potential of various alternatives and mitigation measures.

Appendix 9 (Policy Screening Report) of this EIS addresses NEPA's requirement to discuss possible conflicts between proposed actions and the objectives of federal, state, local, or tribal land use plans, policies, and controls (40 CFR 1502.16[c]).

F.1 Indirect Effects Including Growth-Inducing Effects

NEPA requires a discussion of indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. (40 CFR 1502.16[b] and 1508.8[b])

The availability of adequate electric power is one of several potential factors affecting population growth, along with such factors as water supply, the availability of sewage treatment facilities; the availability of developable land; employment opportunities; housing costs and availability; commuting distances; cultural amenities; climate; and local government growth policies contained in general plans and enacted in zoning ordinances.

SCE's Proposed Project would upgrade transmission lines between the Devers Substation in Riverside County and the Vista and San Bernardino Substations in San Bernardino County. The upgraded lines would increase the transfer capacity in the West of Devers corridor to 4,800 MW, allowing additional electrical power to be delivered into load centers, particularly from energy facilities in the desert region east of Devers Substation. The capacity increase would allow additional generation facilities to interconnect to the transmission grid. These facilities are anticipated to be primarily wind and solar renewable energy facilities.

With regard to the Proposed Project, potential growth-inducing impacts could arise in three ways: from direct and indirect employment associated with construction of Proposed Project facilities; by providing additional electrical power supplies; and from the development of generation facilities that would make use of the upgraded transmission line.

The Proposed Project would not contribute *directly* to the creation of permanent jobs or housing in the SCE service area; it is a construction project of limited duration and, as discussed in Section F.1.1 below and in Section D.8 (Socioeconomics and Environmental Justice), would not result in in-migration or long-term job creation.

By delivering additional electric power into the region through the upgraded transmission system, the project would *indirectly* facilitate growth by ensuring the availability of power to serve the growth that is anticipated under adopted city and county General Plans. This is discussed in Section F.1.2 below. Not considering the anticipated growth could result in an insufficient supply of electric power in the future, resulting in delivery curtailments and brown-outs if the combined demand of current and new residents and businesses outstrips the electric supply. Population growth, including development of housing, commercial and industrial building, and roads to accommodate new residents and businesses would have environmental consequences. These are addressed by the individual cities and counties in the service area as well as regional agencies, which have the authority and responsibility to approve or deny projects and to impose conditions of approval and mitigation to address any significant environmental impacts associated with these projects. Primary responsibility for addressing orderly growth and its impacts rests with the jurisdictions having land use approval authority.

Planned and potential energy generation facilities in eastern Riverside County and Imperial County required access to the electric transmission grid to deliver power to load centers. (These are described in the Introduction to this EIS; see Section A.2.4.3 (Interconnecting Planned Generation Resources.) By increasing the capacity of the transmission system between Devers Substation and Vista and San Bernardino Substations, additional power generation projects could be developed and interconnected to the transmission grid. Development of these projects, in particular renewable energy projects, would result in conversion of extensive areas to this industrial use. This is discussed in Section F.1.3 below

F.1.1 Growth Caused by Direct and Indirect Employment

As indicated in Section B.3.8 (Description of the Propose Project, Construction Workforce and Equipment) the daily workforce necessary for construction of the Proposed Project is anticipated to be up to approximately 335 to 340 personnel: 300 personnel working on transmission and subtransmission lines, 15 to 20 construction personnel at each substation, and 20 construction personnel on distribution lines. The actual numbers would vary from day to day, depending on the tasks being executed and the number of active construction locations. Removing existing transmission lines and structures and installing new transmission lines and structures while minimizing power outages will require a complex construction schedule. It is expected that multiple locations would be under construction simultaneously and that different activities will be occurring at different locations. To be conservative, the maximum estimated average daily workforce is assumed for the Proposed Project duration. If a substantial number of workers were to relocate permanently, this would have the potential to cause population growth. However, a large local construction workforce is available within reasonable commute distance of the project components. The construction workforce can be drawn from the large population centers in Riverside and San Bernardino Counties, with workers also available from Orange and Los Angeles Counties.

During construction, few if any workers are expected to relocate permanently to the area; as a result, no new demand to local housing is expected attributable to the Proposed Project. Because personnel are not expected to permanently relocate as a result of project implementation, the project would not result in new demand to local public services or facilities that serve the Proposed Project route and region. Following construction, no new personnel are anticipated to be added to the utility's permanent workforce to operate and maintain project facilities once the project is energized. This is because much of the Proposed Project is to replace existing transmission facilities with upgraded transmission facilities.

Section D.8 (Socioeconomics and Environmental Justice) describes the existing labor force within the Proposed Project area. Due the size of the labor force in the region, it is assumed that much of the labor force required for construction would come from within the region, with specialty tradespersons temporarily relocating from elsewhere.

The number of workers in the construction trades locally is indicative of the labor pool that may be available to work on the project. In addition to the labor pool in the immediate vicinity of the project, the larger regional labor pool can be tapped as well, as construction workers typically work throughout the region in which they reside.

At the peak of construction-related activities, the Proposed Project would require an estimated maximum of 335 to 340 workers per day. As shown in Table D.8-1 in Section D.8, San Bernardino and Riverside Counties have a combined construction trades workforce of nearly 134,000 persons. The workforce needed for the project is an exceedingly small portion of the total construction workforce found in San Bernardino and Riverside Counties. The majority of these workers would be expected to commute between their homes and individual work sites or assembly points. A limited number of construction personnel may choose to stay at existing local hotels during construction in lieu of commuting.

Transmission line, fiber optic, and substation construction require a mix of skills. Many skills are available locally; other skills are specialized and specific to the electrical industry. Workers with the required specialized skills often relocate temporarily from elsewhere to work on a project. If workers move to the area from out of state they would require housing. The vacancy rate in rental units in the project vicinity (provided in Table D.8-2) indicates there is a sufficient supply of housing available for transient workers. There is an adequate supply of hotels and other short-term and long-term rental situations within the Proposed Project area to accommodate out-of-town (non-commuting) personnel. As well, some temporarily relocating workers may also bring or acquire trailers in which to live. Therefore, no growth in residential housing or services would occur. Activities associated with construction of the Proposed Project would not increase demand for housing, induce population growth, or be considered growth-inducing.

Operation and maintenance of SCE's transmission line upgrades would require routine and ongoing maintenance. These activities would be similar in nature and extent to those currently occurring on the existing transmission line. Any potential increase in duration, intensity, or frequency would be nominal and would not create long-term employment opportunities. Therefore, operation and maintenance activities would not result in a permanent increase to the local population, increase demand for housing, or be considered growth-inducing.

F.1.2 Growth Related to Provision of Additional Electric Power

As outlined in in the Proponent's Environmental Assessment (PEA), SCE's primary objectives of the Proposed Project are the following:

1. Allow SCE to meet its obligation to integrate and fully deliver the output of new generation projects located in the Blythe and Desert Center areas that have requested to interconnect to the electrical transmission grid.
2. Consistent with prudent transmission planning, maximize the use of existing transmission line rights-of-way to the extent practicable.
3. Meet project need while minimizing environmental impacts.
4. Facilitate progress toward achieving California's RPS goals in a timely and cost-effective manner by SCE and other California utilities.
5. Comply with applicable Reliability Standards and Regional Business Practice developed by NERC, WECC, and the CAISO; and design and construct the project in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects.
6. Construct facilities in a timely and cost-effective manner by minimizing service interruptions to the extent practicable.

The Proposed Project is intended to supply power to the greater Los Angeles basin in response to existing and anticipated regional demand, and is not related to any particular residential or commercial development projects. It is to serve the projected growth in population and energy demand already accounted for in regional and local plans. While construction of the Proposed Project itself would not have direct or indirect growth-inducing impacts, operation of the Proposed Project could facilitate growth indirectly through the additional electric power that would be available.

Section D.8 (Socioeconomics and Environmental Justice) provides a description of the existing populations within the Proposed Project area. The area that would be served by the Proposed Project is experiencing population growth and this growth is expected to occur with or without implementation of the Proposed Project. Local officials have authority over land use decisions in their jurisdictions, determining the type, amount, and location of growth in a region. Providers of basic infrastructure and utilities (e.g., highways and transit services, water and sewer, and gas and electric service) anticipate the demands that will accompany growth and incorporate this information into their planning for new, upgraded, or expanded facilities and services.

The transmission line would be built so that as demand increases, future overloading of transmission facilities would be avoided. By increasing capacity and reducing generation outages, the Proposed Project would increase power system reliability. Increasing reliability and providing additional transmission capacity in anticipation of projected demand growth only *indirectly* affects growth, which is ultimately determined by local land use decisionmakers.

F.1.3 Growth Related to Development of Additional Power Generation Facilities

The determination as to whether SCE's Proposed Project or alternatives to the project would induce growth by altering land use patterns and creating environmental impacts, as noted in NEPA regulations, depends on the extent to which the proposed new transmission line's increased capacity would remove an obstacle to growth in the region.

Growth-Inducing Projects. The proposed transmission line upgrade would provide additional capacity to import electricity from eastern Riverside County into the densely populated Los Angeles basin. Increasing the line capacity between Devers Substation and points west would remove an obstacle to development of new renewable generation projects; some of these projects would not otherwise be able to interconnect to the transmission grid. These are reasonably foreseeable future local renewable generation projects that would be built based on the completion of the Proposed Project or alternatives.

The solar generation projects described in Section B.7, Connected Actions, total 1,574 MW. These are the projects that are considered to be most directly facilitated by the Proposed Project, based on their status in the CAISO interconnection process. The Proposed Project would increase the transfer capacity of the WOD corridor by 3,200 MW, and the "connected" projects would require only 1,574 MW. Therefore, there remains capacity of about 1,626 MW available for other future projects to use. This capacity is considered to be growth-inducing.

Several future renewable energy projects that are tied to the completion of the Proposed Project have been identified; they are presented in Table F-1. Each of the projects in the table is defined as connecting into the Colorado River Substation, but these projects are not yet in the CAISO queue.

Table F-1. Growth-Inducing Projects – Generation or Transmission Made More Likely by Implementation of WOD Upgrade Project

Project Name	MW / Type	Explanation of Growth Inducing Aspects
Blythe Mesa Solar Project, Renewable Resources Group	485 MW Solar PV	This project is facilitated by implementation of WOD Upgrades because it may rely upon the proposed WOD-UP project. The proposed WOD-UP project would improve the likelihood of this project being designated as "deliverable" to the ISO grid, which improves the project's viability."
Palo Verde Mesa Solar Project, Renewable Resources Group	486 MW Solar PV	This project is facilitated by implementation of WOD Upgrades because it may rely upon the proposed WOD-UP project. The proposed WOD-UP project would improve the likelihood of this project being designated as "deliverable" to the ISO grid, which improves the project's viability."
Desert Quartzite Project (BLM CACA 49497), First Solar	600 MW Solar PV	This project is facilitated by implementation of WOD Upgrades because it may rely upon the proposed WOD-UP project. The proposed WOD-UP project would improve the likelihood of this project being designated as "deliverable" to the ISO grid, which improves the project's viability."
Delaney-Colorado River 500 kV Transmission Line	500 kV transmission to Arizona	This transmission project represents growth in transmission capacity east of the Colorado River Substation. This project is assumed to be induced by implementation of WOD-UP because it could not likely be constructed without the capacity provided by WOD-UP. According to SCE Response to Data Request ALT-10: the CAISO decision to approve this transmission line relies on the incremental capacity of the WOD Upgrades to accommodate the additional flow. According to CAISO Response to CEQA Data Request 1: "*The Delaney–Colorado River 500kV upgrade is targeted to be in service in 2020 to coincide with the in-service date of the WOD upgrades. If Delaney–Colorado River 500kV is completed before the WOD upgrades, then the economic benefits associated of the project with increased import capability will not accrue until the WOD upgrades are completed. Completion of the Delaney-Colorado River 500 kV project prior to the WOD upgrades would also further aggravate the WOD constraint.*"

Additional potential future projects are unknown at this time. For these, information on locations, facility characteristics and size, agency requirements, and the outcome of local land use decisions cannot now be defined. Because of the speculative nature of these potential future projects, they are considered to be beyond the scope of this analysis.

DRECP. In addition, additional transmission capacity may be required as a result of the Draft Desert Renewable Energy Conservation Plan (DRECP) and EIR/EIS was published on September 26, 2014. The development of renewable energy that could occur if the plan is approved could require development of additional transmission lines, even beyond what is envisioned under the Proposed Project. Where feasible, it is likely that these transmission lines would be proposed to be located in or adjacent to existing lines or corridors, which almost certainly would include segments of SCE's West of Devers right-of-way for generation project in Riverside County. The DRECP Preferred Alternative anticipates the possibility of needing up to two new 500 kV circuits in the WOD corridor. Clearly, providing transmission capacity is an essential link between renewable energy facilities at remote locations and load centers. Easing or removing the transmission constraints west of the Devers Substation (which would happen with implementation of the WOD Project) would increase the likelihood that new generation facilities would be developed. This is a directly foreseeable result of upgrading the transmission capabilities under the Proposed Project. While development of generation projects is not expected to result in large population growth in the vicinity of these facilities, the increased capacity of the transmission grid would lead to "changes in the pattern of land use" and "related effects on air and water and other natural systems, including ecosystems," identified in NEPA regulations as reasons to address indirect effects. (40 CFR 1508.8(b))

F.1.4 Conclusions Regarding Growth-Inducement

The construction and operation of SCE's Proposed Project would not result in a permanent increase in the local population or demand for housing, or be considered growth inducing from a community growth perspective.

The increased capacity provided by SCE's transmission line upgrade project would remove one obstacle to development of new renewable generation projects in Riverside and Imperial Counties, and therefore would be considered growth-inducing in terms of the likelihood that land uses east and southeast of the Devers Substation would be altered. However, renewable generation projects have generally small permanent employment, so they would not expected to induce long-term population changes beyond the growth already accounted for in local land use plans.

Construction of the Proposed Project would not result in a significant in-migration of workers or create long-term jobs; therefore, the construction phase of the project is not considered to be growth inducing.

During its operation, the project would facilitate delivery of additional power into the region. This would ensure that the supply of power is reliable and sufficient to meet demand. Providing sufficient reliable power can be construed as growth-inducing, in that people and businesses may be attracted to the region because of this. However, the decision to accommodate growth rests with local officials having jurisdiction over land use plans and decisionmaking. The responsibility and authority to manage growth and its impacts rests with these officials.

By increasing transmission line capacity, the project would allow the development of additional electric power generation facilities. The development and operation of these facilities would not result in substantial population growth, but would result in the conversion of substantial land areas to a new type of land use. The Proposed Project would be growth inducing in that it would allow development of electric power generation projects covering potentially significant amounts of land. While transmission capacity is necessary for development of these projects, it alone is not sufficient. The projects would require approvals from the officials having jurisdiction over the land on which they would be built. The approval process would include environmental review, implementation of conditions of approval and mitigation measures, and consideration of public policy objectives such as increasing the use of renewable energy in lieu of fossil fuels.

F.2 Irreversible and Irretrievable Commitment of Resources

Section 102(2)(c)(ii) of NEPA requires that an EIS include information on any adverse environmental effects that cannot be avoided, should the proposed action be implemented (40 CFR 1502.16). A commitment of a resource is considered *irreversible* when the primary or secondary impacts from its use limit the future options for its use. An *irretrievable* commitment refers to the use or consumption of a resource that is neither renewable nor recoverable for use by future generations. These changes include uses of nonrenewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damages that may result from project-related accidents.

Implementation of the Proposed Project would result in the consumption of energy in the form of fuel needed for vehicles and equipment used during construction. Additional energy would be required for the manufacture of new materials for the project, some of which would not be recyclable at the end of the Proposed Project's lifetime. The energy required for the production of these materials also would result in an irretrievable commitment of natural resources. The anticipated equipment, vehicles, and materials required for construction of the Proposed Project are detailed in Section B.3 (Construction of

Proposed Project). Maintenance and inspection of the Proposed Project would not change appreciably from SCE's existing activities in project area, and thus would not cause a substantial increase in the consumption or use of nonrenewable resources.

Implementation of the Proposed Project would additionally require the permanent loss of approximately 372 acres of vegetation and habitat, which equals 10.5 percent of the total land (3,553 acres) disturbed for construction. Assuming that the mitigation measures for biological resources recommended in this EIS (see Sections D.4 and D.5) would be implemented, project-induced loss of vegetation and habitat would be less than significant.

During the Proposed Project's operational phase, the transport of electrical power generated from nonrenewable resources as well as renewable resources would occur. However, a primary purpose of the project is to deliver energy from renewable resources. This ability to deliver renewable energy would be increased with development of the project.

Construction and operation of the Proposed Project would require the use of a limited amount of hazardous materials such as fuel, lubricants, and solvents. Additionally, during project construction and operation preexisting soil or groundwater contamination potentially could be encountered. All hazardous materials would be stored, handled, and used in accordance with the mitigation measures recommended in this EIS and applicable federal, State, and local regulations, including a construction-phase Storm Water Pollution Prevention Plan (SWPPP) and operational-phase Hazardous Materials Business Plan and Storm Water Management Plan. Assuming appropriate implementation of these plans and practices, as well as the mitigation measures recommended in Section D.10 (Public Health and Safety), potential environmental accidents associated with the Proposed Project would be less than significant.

F.3 Adverse Environmental Effects that Cannot be Avoided Should the Proposed Project Be Implemented

The environmental impacts of the Proposed Project are described in the environmental analysis sections in Section D. Impacts that are significant and cannot be reduced to less than significant levels through the application of feasible mitigation measures have been characterized as significant and unmitigable (Class I) impacts. As required by NEPA (40 CFR 1502.16), the five unavoidable adverse impacts resulting from the Proposed Project are summarized below. Complete descriptions of these impacts are presented in Section D.

- **Air Quality**
  - Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants.
- **Cultural Resources**
  - Impact CL-2: Construction, operation and maintenance, and restoration could cause an adverse change to unknown buried prehistoric and historical archaeological sites or buried Native American human remains.
- **Noise**
  - Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances.
- **Visual Resources**
  - Impact VR-2: Construction would result in visual contrast due to vegetation removal.
  - Impact VR-9: Long-term presence of the project would result in landscape changes that degrade existing visual character or quality.

F.4 Relationship Between Short-Term Uses and Long-Term Productivity of the Environment

NEPA regulations (40 CFR Part 1500 et seq.) require that an EIS discuss issues related to environmental sustainability. The discussion, as it relates to environmental consequences, must be included in the EIS, including consideration of "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (42 United States Code [USC] Section 4332[C] [iv] and 40 CFR 1502.16).

This section presents the tradeoffs in the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity of resources. This is an important consideration when analyzing the effects of a project in terms of whether it would result in short-term environmental effects (adverse or beneficial) to the detriment of achieving long-term objectives or maximizing productivity of affected resources.

Construction-related activities the Proposed Project would create short-term impacts (less than 5 years) when SCE is:

- Establishing temporary staging areas and pulling and splicing sites
- Developing new access and spur roads
- Removing lattice steel towers and wooden poles
- Constructing and erecting new lattice steel towers and tubular steel poles
- Relocating subtransmission lines
- Installing communications lines
- Upgrading substations and existing communications facilities.

The Proposed Project's construction-related activities are detailed in Section B.3 (Construction of Proposed Project). Where an impact is identified that mitigation that would reduce, or if an impact is not able to be mitigated but does not extend past construction, it was considered a short-term use of the environment. Examples of short-term impacts include construction-period disturbance of soil and vegetation, disruptions to traffic, noise, and fugitive dust. Short-term adverse impacts would occur during Proposed Project construction in these resource areas:

- Agriculture
- Air Quality
- Biological Resources – Vegetation
- Biological Resources – Wildlife
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use and BLM Realty
- Mineral Resources
- Noise
- Paleontological Resources
- Recreation
- Transportation and Traffic
- Utilities and Public Services
- Visual Resources
- Water Resources and Hydrology
- Wildland Fire
- Electrical Interference and Safety

The Impact Summary Tables at the end of the Executive Summary summarize these impacts.

During project construction, local spending by contractors for wages, materials, equipment, lodging, food, entertainment, and other miscellaneous purchases would occur, resulting in a positive short-term economic effect.

Long-term productivity of the area affected by the project would include current uses of the ROW extending beyond 5 years. The Proposed Project would be located in an existing transmission line ROW, with the major change from current conditions being the removal of existing towers and poles and their replacement by other transmission structures and lines. After construction is completed, existing uses would be restored. These uses vary along the length of the ROW and include open space, landscaped recreational areas with paths, agriculture, and vacant land, as well as its use as a transmission as a transmission corridor. Over the operational lifetime of the Proposed Project, long-term adverse impacts would occur along the ROW. These would be similar in nature to existing impacts and would be associated with the physical presence of the project and ongoing operations and maintenance activities. Ground disturbance during construction could permanently and adversely affect cultural resources. This would be addressed by mitigation measures requiring monitoring and appropriate recordation and curation of any discoveries. The removal of vegetation would create visual contrast, but this would be reduced by subsequent revegetation of disturbed areas as part of project completion. Visual contrast of transmission structures with the environment would result from the presence of new structures; however, this would be reduced by the use of non-reflective, non-specular steel. In addition, many towers of differing sizes and designs would be removed and new towers of a similar design to each other would be installed. The overall number of transmission structures would be reduced. Where feasible, towers would be paired. This would reduce visual disharmony in the ROW. In some locations, the FAA may require installation of aviation warning lighting on towers and marker balls on conductor spans. These would introduce new visual elements into the ROW. The long-term effects of the project would represent relatively minor impacts on the long-term productivity of the land, as compared to its current condition. Existing uses, such as recreation and agriculture, would continue as before.

F.5 Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures

NEPA requires a discussion of energy requirements and conservation potential of various alternatives and mitigation measures (40 CFR 1502.16[e]).SCE proposes to upgrade existing electric transmission lines from Devers Substation (in Riverside County) Vista and San Bernardino Substations (in western San Bernardino County), as well as relocate various subtransmission and distribution lines and install communications lines. The project would facilitate the importation of energy from renewable sources in eastern Riverside County into urban load centers. This renewable energy would replace the need for an equal amount of energy produced by non-renewable resources such as natural gas, oil, and coal.

As stated above in Section F.2 (Irreversible and Irretrievable Commitment of Resources) construction activity associated with the Proposed Project or any of the alternatives would require the consumption of fuel for construction vehicles, construction equipment, and helicopter use. Additionally, construction would require the manufacture and delivery of new materials, which would require energy use. Based on their composition, some of the structures and conductors to be removed would be recyclable. As well, at the end of the Proposed Project's lifetime, materials installed as part of the project would be recyclable. Recycling would reduce the energy needs of materials production, as compared to manufacturing materials from new raw materials such as ore or petroleum. Maintenance and operations and inspection of the Proposed Project would not change appreciably from SCE's existing activities in project area, and thus would not cause a substantial increase in the consumption or use of nonrenewable resources.

Addressing some aspects of air quality impacts and traffic congestion also reduces energy consumption. SCE will be required to prepare a Construction Management Plan (Mitigation Measure T-1a), which will include methods of reducing crew-related traffic, such as carpooling from assembly points. The California Air Resources Board (CARB) limits idling time of construction vehicles, reducing emissions and fuel use. Such measures would be increase the energy efficiency of the project.

No increases in inefficiencies or unnecessary energy consumption are expected to occur as a direct or indirect consequence of the project.

F.6 References

SCE (Southern California Edison). 2013. Proponent's Environmental Assessment for the West of Devers Upgrade Project. Application A.13-10-020. October 25, 2013.

G. Comparison of Alternatives

G.1 Introduction

This section summarizes and compares the environmental advantages and disadvantages of the proposed West of Devers Upgrade Project and the alternatives evaluated in this EIS. This comparison is based on the assessment of environmental impacts of the Proposed Project and each alternative, as identified in Sections D (Environmental Impacts of Proposed Project and Alternatives), E (Cumulative Impacts), and F (Other NEPA Assessment). Section C introduces and describes the alternatives considered in this EIS; Appendix 5 is the Alternatives Screening Report, which documents all alternatives considered in the screening process. Section C and Appendix 5 include maps and diagrams illustrating all alternatives that have been retained for analysis and are compared within this section. This section is organized as follows:

- Section G.2 describes the NEPA regulatory requirements for alternatives comparison and Section G.3 describes the methodology used for comparing alternatives.
- Sections G.4 and G.5 compare route and system alternatives.
- Section G.6 defines the Environmentally Preferred Alternative, based on comparison of each alternative with the Proposed Project.
- Section G.7 compares the No Action Alternative with the alternative that is determined in Section G.6 to be overall environmentally preferred.

BLM Conclusion Regarding Environmentally Preferred Alternative. NEPA encourages lead agencies to make recommendations of the Environmentally Preferred Alternative(s) during EIS preparation and requires specifying the alternative or alternatives that are considered to be environmentally preferable at the time of the Record of Decision. This is ordinarily the alternative that causes the least damage to the biological and physical environment and best protects, preserves and enhances the resources that are present [BLM Manual H-1790-1, Ch. 9.7.1; 40 CFR 1505.2(b); and Forty Questions 6(a) and 6(b)]. The Environmentally Preferred Alternative would be the Phased Build Alternative (which incorporates the structure locations defined in the Tower Relocation Alternative). The Environmentally Preferred Alternative is illustrated in Figure G-1 (presented at the end of this section). The second preferred alternative would be the combination of the Tower Relocation Alternative, the Iowa Street 66 kV Underground Alternative, and the Proposed Project for the segments unaffected by the Relocation and Iowa Street alternatives. The least environmentally preferred option would be the Proposed Project with no modifications.

Conclusion Regarding BLM Agency Preferred Alternative.

The Draft EIR/EIS and this Final EIS describe the SCE Proposed Project and three alternatives, which are described in Section C and in more detail in Appendix 5:

- Tower Relocation Alternative
- Iowa Street 66 kV Underground Alternative
- Phased Build Alternative

BLM planning regulations and NEPA regulations allow definition of BLM's Agency Preferred Alternative in either the Draft EIS or the Final EIS (BLM Manual 1790-1, Ch. V(B)(4)(c) and NEPA Section 1502.14(e)). The BLM did not identify an Agency Preferred Alternative in the Draft EIR/EIS. While this section defines BLM's Agency Preferred Alternative, the BLM selected alternative may change before issuance of the Record of Decision.

The Tower Relocation Alternative and the Iowa Street Underground Alternative would not change the transfer capacity of the Proposed Project. They would each reduce environmental impacts in the specific areas around which they would be implemented. Therefore, BLM finds that those two alternatives are preferred over the Proposed Project segments that they would replace.

The Phased Build Alternative is not preferred over the Proposed Project. This alternative, if constructed as specified in the Draft EIR/EIS, would limit transfer capacity to about 3,000 MW when the Proposed Project would provide 4,800 MW of capacity. As shown in Table A-1, there are 4,696 MW of solar energy projects east of the Devers Substation. This indicates that the level of development contemplated by BLM, where BLM has either recently completed or recently begun the review process, would be in excess of the capacity of the Phased Build Alternative. Reviewing the CAISO queue allows a similar conclusion. Although the capacity of the alternative would satisfy the 2,200 MW level of development originally anticipated and shown in Table A-2, Table A-3 shows that at least another 3,100 MW of projects are planned for eastern Riverside County that entered the queue relatively recently.

Given the federal priority to maximize development of renewable energy projects, the larger capacity of the Proposed Project is considered to be important. The Phased Build Alternative would limit the capacity achievable in the corridor to result in a decrease of construction disturbance of about 25 percent in comparison with the Proposed Project. In addition, the Phased Build Alternative would require over 100 interset structures to meet structural requirements along the line segment where the 220 kV structures are retained, which reduces the visual benefit of the alternative that was originally stated in the Draft EIR/EIS.

Construction of the Proposed Project now would also reduce the likelihood of building future phases of the Phased Build Alternative, and this may avoid additional near-term construction disturbances in the corridor.

The Final EIR (published by the CPUC in December 2015) defined the Phased Build Alternative as the CEQA Environmentally Superior Alternative, because that alternative would have less ground disturbance and less severe visual effects. CEQA requires that an EIR define the alternative with least impacts (if that alternative is not the No Project Alternative). However, the CPUC's Administrative Law Judge and the Commissioners will consider other policy issues in the final decision on the West of Devers Upgrade Project.

No Action Alternative. The No Action Alternative includes transmission system options are considered to be likely to occur in the absence of the Proposed Project. As described in Section G.7, the No Action Alternative would have more severe environmental impacts than either the Proposed Project or the alternatives considered in this EIS.

G.2 NEPA Requirements for Alternatives Comparison

Under NEPA the Draft EIS should identify the environmentally preferable or superior alternative from a range of alternatives considered if one exists at the draft stage. Commenters from other agencies and the public are also encouraged to address this question. However, in all situations, the environmentally preferable alternative must be identified in the Record of Decision on the Final EIS [Forty Questions No. 6(a) and 6(b)]. The answer to Forty Questions No. 6(a) states

A. Section 1505.2(b) requires that, in cases where an EIS has been prepared, the Record of Decision (ROD) must identify all alternatives that were considered, "...specifying the alternative or alternatives which were considered to be environmentally preferable." The environmentally preferable *alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.*

The Council recognizes that the identification of the environmentally preferable alternative may involve difficult judgments, particularly when one environmental value must be balanced against another. The public and other agencies reviewing a Draft EIS can assist the lead agency to develop and determine environmentally preferable alternatives by providing their views in comments on the Draft EIS. Through the identification of the environmentally preferable alternative, the decisionmaker is clearly faced with a choice between that alternative and others, and must consider whether the decision accords with the Congressionally declared policies of the Act.

In addition, the BLM NEPA Handbook (H-1790-1, Chapter 9.2.7.3) requires identification of an agency preferred alternative, which would best fulfill the purpose and need of the project, in either the Draft or Final EIS. [40 CFR 1502.14(e); Forty Questions No. 4(a), 4(b), and 4(c)]

G.3 Comparison Methodology

The following methodology was used to compare alternatives in this EIS:

- **Step 1: Identification of Alternatives.** A screening process (described in Section C and Appendix 5) was used to identify 16 alternatives to the Proposed Project. A No Action Alternative was also identified. This range of alternatives is sufficient to foster informed decision-making and public participation. No other feasible alternatives meeting most of the project objectives were identified that would lessen or alleviate significant impacts.
- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the Proposed Project and alternatives were identified in Sections D, E, and F, including the potential impacts of transmission line, subtransmission line, distribution line, telecommunications, and substation upgrades construction and operation, and potential connected actions. For each area of the Proposed Project where an alternative is considered, the comparison in Section G.4 begins with a summary of the significant impacts that cannot be mitigated (Class I impacts). Highlighting these areas of significant impacts identifies whether an alternative would be capable of eliminating significant unavoidable environmental effects of the Proposed Project, and whether an alternative would create new significant impacts. This simplifies identification of the environmentally preferred alternatives while considering all issue areas equally.
- **Step 3: Comparison of Proposed Project and Alternatives.** The environmental impacts of the Proposed Project were compared to those of each alternative to determine the environmentally preferred alternative. The preferred proposed route was also compared with system alternatives. The overall environmentally preferred alternative was then compared to the No Action Alternative (Section G.5).

Determining an environmentally preferred alternative requires balancing many environmental factors. In order to identify the environmentally preferred alternative, the most important impacts in each issue area were identified and compared in detailed comparison tables in Section G.4. Each of these tables presents a preference ranking and a brief explanation of the ranking for each environmental issue area.

Although this EIS identifies an environmentally preferred alternative, it is possible that the decision-makers could balance the importance of each impact area differently and reach different conclusions. The comparisons presented in this section highlight situations where an alternative would create impacts in one area as a consequence of avoiding impacts to another area.

G.4 Comparison of Alternatives

The following sections summarize the significant impacts that cannot be mitigated (Class I impacts), as well as the advantages and disadvantages of each alternative, and present a determination of whether the Proposed Project or an alternative is considered to be environmentally preferred within each area. The preferred alternative is identified for each issue area. In the summary tables for each area, an alternative shown as "preferred" may still have environmental effects, but when compared with the other alternatives, the environmental effects would be minimized with the preferred alternative.

Three alternatives to the Proposed Project are addressed in this section. They are described in Section C of this EIS, and in more detail in Appendix 5 (Alternatives Screening Report). Table G-1 briefly summarizes the characteristics of each alternative and explains how each could combine with the other alternatives analyzed.

G.4.1 Tower Relocation Alternative

The Proposed Project was designed to follow an existing electric utility corridor. Use of the established corridor and many existing access roads would minimize the duration and intensity of construction-related impacts. The Tower Relocation Alterative also uses the existing SCE corridor, but would require moving Proposed Project structures further from residences in Segment 4 (Beaumont), Segment 5 (East Banning/Morong), and Segment 6 (Whitewater). Following is a comparison of the **Tower Relocation Alternative** with the Proposed Project.

Comparison of Impacts

Table G-2 presents a comparison of the Tower Relocation Alternative with the Proposed Project for the environmental disciplines where there would be a difference in the level of impacts compared to the Proposed Project. This table does not include numerous disciplines where impacts are similar, and thus, are not factors in the comparison (agriculture, air quality, biological resources – vegetation, biological resources – wildlife, climate change, cultural resources, socioeconomics and environmental justice, geology and soils, hazards and hazardous materials, mineral resources, paleontological resources, recreation, transportation and traffic, utilities and public services, water resources and hydrology, wildland fire, and electrical interference).

The Tower Relocation Alternative is preferred because it would produce a less severe visual impact (compared to the Proposed Project) by relocating various tower pairs approximately 50 feet to the north of the proposed tower locations in Segments 4, 5, and 6. By shifting structures farther away from the closest residences, the Tower Relocation Alternative would achieve structure placements within the ROW that would appear more similar to the existing structure locations. As a result, the Tower Relocation Alternative would cause less incremental visual contrast, structure prominence, and view blockage compared to the Proposed Project when viewed from residential locations along the south side of the ROW.

Likewise, the Tower Relocation Alternative would reduce construction-related disturbance associated with the upgraded 220 kV lines by ensuring that relocated towers would be no closer to residences than the existing structures.

Table G-1. Summary of Alternatives Analyzed

Alternative Name	Description	System Transfer Capacity	Ground Disturbance	Construction Timeframe	Notes about Combining with Other Alternatives
Tower Relocation Alternative	• Locates certain of SCE's proposed transmission structures farther from residences in Segments 4, 5, and 6	4,800 MW (same as Proposed Project)	• Similar ground disturbance to Proposed Project.	• Requires a few additional months for construction due to additional outages and shoo-flies needed.	• This alternative applies to specific location in Segments 4, 5, and 6 and would be implemented in combination with the Proposed Project in the other areas of those segments, and in all of Segments 1, 2, and 3. • These alternative tower locations are incorporated into the Phased Build Alternative as well
Iowa Street 66 kV Underground Alternative	• Installs 1,600 feet of proposed overhead 66 kV subtransmission line underground within Iowa Street.	4,800 MW (same as Proposed Project)	• Additional ground disturbance within roadways from trenching for 1,600 feet and 2 transition structures, as opposed to construction of 9 overhead poles with the Proposed Project.	• Requires slightly more time for construction, but this short segment would not affect overall construction timeframe of the project.	• This alternative could be combined with either the Proposed Project or with the Tower Relocation Alternative • This alternative may not be combined with the Phased Build Alternative; the 66 kV subtransmission system may or may not be able to be retained in the Phased Build Alternative without being relocated

Table G-1. Summary of Alternatives Analyzed

Alternative Name	Description	System Transfer Capacity	Ground Disturbance	Construction Timeframe	Notes about Combining with Other Alternatives
Phased Build Alternative	• Retains existing double-circuit 220 kV transmission structures • Removes the two lines of existing single-circuit 220 kV structures and replaces them with one line of new double-circuit structures • All 220 kV conductors would be Drake 795 ACCR • On Morongo land, 220 kV structures would be relocated and rebuilt as TSPs as defined in SCE-Morongo ROW Agreement • Allows for future phased increases in corridor transmission capacity, as required	3,000 MW	• Requires 20 to 25 percent less new structure construction (and associated ground disturbance) in comparison to the Proposed Project	• Avoids near-term construction related to removing and re-building all towers, but would result in a need to install a greater number of temporary structures (shoo-flies), which could slow the pace of construction. • SCE has stated that the duration of construction could be similar to that of the Proposed Project	• This alternative incorporates the structure relocations defined in the Tower Relocation Alternative • This alternative may eliminate the need for the Iowa Street 66 kV Underground Alternative: SCE's 66 kV system may be able to be retained and may or may not need to be modified as it would in the Proposed Project

Due to a reduction in significant visual impacts and an increased distance of construction disturbances from residences and other sensitive receptors, ***the Tower Relocation Alternative has been found to be environmentally preferred*** compared to the Proposed Project in Segments 4, 5, and 6.

Table G-2. Comparison of the Proposed Project to Tower Relocation Alternative

Issue Area	Proposed Project	Tower Relocation Alternative
System Transfer Capacity	4,800 MW	4,800 MW
Land Use and BLM Realty	Greater disturbance of sensitive receptors (residences) during both construction and operation due to structures located closer to the edge of the ROW	**Preferred** Even though construction timeframe would be longer, towers and associated construction disturbance would be located farther from the edge of the ROW and sensitive receptors
Noise	More severe noise effects on sensitive receptors (residences) from construction activities and from corona noise and maintenance activities during operation	**Preferred** Noise impacts remain adverse, but would be reduced due to greater distance of structures to residences
Visual Resources	Significant adverse visual impacts on sensitive receptors (residences) during both construction and operation	**Preferred** Visual impacts reduced due to greater distance of towers from residences and other sensitive receptors

G.4.2 Iowa Street 66 kV Underground Alternative

The following sections compare the **Iowa Street 66 kV Underground Alternative** with the overhead 66 kV San Bernardino–Redlands-Tennessee subtransmission line component of the Proposed Project along a segment of Iowa Street in the City of Redlands. This alternative would require installation of 1,600 feet of 66 kV subtransmission line underground, rather than overhead on wood poles as defined in the Proposed Project.

Comparison of Impacts

Table G-3 presents a comparison of the Iowa Street 66 kV Underground Alternative with the Proposed Project for the environmental disciplines where there would be a difference in the level of impacts compared to the Proposed Project. This table does not include numerous disciplines where impacts are similar, and thus, are not factors in the comparison (agriculture, biological resources – vegetation, biological resources – wildlife, climate change, socioeconomics and environmental justice, land use and BLM realty, mineral resources, paleontological resources, recreation, wildland fire, and electrical interference). Although an underground route would have greater ground disturbance, traffic impacts and longer construction time, the Iowa Street 66 kV Underground Alternative is preferred because it would eliminate the long-term adverse visual impacts associated with the new overhead 66 kV subtransmission route along Iowa Street, adjacent to the Cottage Lane residential subdivision in Redlands.

This alternative would have more severe short-term impacts during construction in a number of resource areas (air quality, noise, traffic, water resources, and utilities). Construction of the alternative would also increase the likelihood of encountering cultural or paleontological resources. However, due to the elimination of the long-term visual impacts, ***the Iowa Street 66 kV Underground Alternative has been found to be the environmentally preferred alternative*** in this segment of the 66 kV subtransmission line component.

Table G-3. Comparison of the Proposed Project to Iowa Street 66 kV Underground Alternative

Issue Area	Proposed Project	Iowa Street 66 kV Underground Alternative
System Transfer Capacity	4,800 MW	4,800 MW
Air Quality	**Preferred** Less equipment used installing overhead poles compared to trenching and hauling of excavated material, back fill, concrete, etc.	Greater construction impacts due to need for trenching for 1,600 feet
Cultural Resources	**Preferred** Less ground disturbance results in lower likelihood of encountering unknown resources or human remains.	Greater likelihood of encountering unknown resources or human remains due to trenching and increased ground disturbance
Geology and Soils	**Preferred** Less ground disturbance exposes less area to potential erosion	More extensive construction, including trenching, results in greater potential for erosion
Hazards and Hazardous Materials	**Preferred** Less likelihood of encountering contaminated soil	More extensive construction, including trenching, results in greater likelihood of encountering contaminated soils
Noise	**Preferred** No excavation and backfilling of a trench; less use of noise-generating equipment and shorter construction duration	Underground construction and trenching would have more severe short-term noise impacts and for a slightly longer duration
Paleontological Resources	**Preferred** Less ground disturbance results in lower likelihood of encountering paleontological resources.	Greater likelihood of encountering unknown resources due to additional ground disturbance from trenching
Transportation and Traffic	**Preferred** Less need for traffic controls and lane closures	More intense construction in road would increase likelihood of traffic congestion
Utilities and Public Services	**Preferred** Lower likelihood of affecting existing underground utilities with towers than trenching. Easier access to lines during outages.	Trenching for underground segment increases likelihood of affecting existing underground utilities. Greater maintenance and restoration time in the event of an outage.
Visual Resources	Adverse long-term visual impacts from the Cottage Lane residential subdivision on Iowa Street and Orange Avenue in the City of Redlands	**Preferred** Elimination of overhead segment in residential neighborhood eliminates long-term adverse visual impacts.
Water Resources and Hydrology	**Preferred** Less ground disturbance exposes less area to potential erosion	Trenching and more extensive construction results in greater potential for erosion, which could impact water quality

G.4.3 Phased Build Alternative

As defined in Final EIS Section C.4.3, the Phased Build Alternative would retain most of the existing 220 kV double-circuit structures, require demolition of the existing single-circuit structures and construction of one new set of double-circuit, and install high-capacity conductors (Drake ACCR) on all 4 circuits. For the new double-circuit towers in Segments 4, 5, and 6, the Phased Build Alternative incorporates the structure locations proposed in the Tower Relocation Alternative. Based on final design and uncertainty of SCE obtaining simultaneous outages, relocation of the 66 kV subtransmission lines and 12 kV distribution lines may or may not be required. The Phased Build Alternative would utilize the existing 220 kV structures in Segment 1, and the existing 66 kV poles would be unaffected, but may be too close to the existing 220 kV structures to allow reconductoring of those retained structures. If the 66 kV subtransmission line relocation is determined to be necessary, the Iowa Street Underground Alternative would be implemented to eliminate the only significant and unmitigable impact from the long-term presence of the 66 kV line when viewed from the Cottage Lane residential subdivision (Impact VR-8).

Up to 110 additional interset towers would be required where the spans between retained towers exceed the strength of existing towers, and at locations where conductor blowout (where conductors could sway horizontally, potentially result in insufficient horizontal safety clearance to the adjacent line) could occur. Interset structures would be required for about one-third of all spans along the retained line. The Phased Build Alternative would allow the retention of nearly 160 existing structures that would be demolished and re-built under the Proposed Project.

In Segment 5 on all Morongo land, the Phased Build Alternative structures would be exactly the same as those of the Proposed Project. All transmission facilities in the westernmost 3 miles would be removed and relocated south to the new ROW closer to I-10. In this segment, 19 pairs of new double-circuit tubular steel poles would be installed and the high-capacity conductor would be installed on the new poles. On the eastern portion of the Morongo land, all existing structures would be removed, and 30 pairs of new double-circuit lattice steel towers would replace the existing single-circuit towers (same as for the Proposed Project). High-capacity conductors would be installed on these new towers. As described in Section ES.3.2 and Appendix 5 (Section 4.4) of this Addendum, there are two options to the Phased Build Alternative for Segment 5. Implementing either of the options would ensure that there would be no future construction activity of new structures on Morongo land.

Comparison of Impacts

Table G-4 presents a comparison of the Phased Build Alternative with the Proposed Project for the environmental disciplines where there would be a difference in the level of impacts compared to the Proposed Project. This table does not include disciplines where impacts are similar, and thus, are not factors in the comparison (agriculture, climate change, socioeconomics and environmental justice, hazards and hazardous materials, mineral resources, recreation, utilities and public services, wildland fire, and electrical interference).

The Phased Build Alternative is preferred over the Proposed Project because it would reduce construction impacts due to the retention of about 160 existing structures. This would reduce the severity of Impacts AQ-1 and N-1. This reduced level of construction results in 20 to 25 percent less ground disturbance with the Phased Build Alternative, although impacts to biological resources and other water- and soil-related impacts would be less than significant with the implementation of mitigation for both the Proposed Project and the alternative. Additionally, all structures in this alternative would be located farther from the edge of the ROW than with the Proposed Project, so noise, dust, and construction disturbance would occur farther from sensitive receptors located at the edge of the ROW, compared to the Proposed Project. Furthermore, the Phased Build Alternative is preferred over the Proposed Project because it would reduce operational impacts (visual presence of the Proposed Project closer to the south edge of the ROW in Segments 4 and 6 for some residential locations. As a result, ***the Phased Build Alternative has been found to be environmentally preferred to the Proposed Project.***

Table G-4. Comparison of the Proposed Project to Phased Build Alternative

Issue Area	Proposed Project	Phased Build Alternative
System Transfer Capacity	4,800 MW	3,000 MW
Air Quality	More extensive demolition and construction. Structures would be closer to edge of ROW where sensitive receptors are located.	**Preferred** Reduced construction activity results in less emissions.
Cultural Resources	More extensive demolition and construction increases potential for disturbance to unknown cultural resources.	**Preferred** Less ground disturbance would reduce the potential to adversely affect unknown buried prehistoric and historical archaeological sites or buried Native American human remains. However, similar to the Proposed Project, this potential impact would remain adverse.
Geology and Soils	More extensive demolition and construction results in a greater potential for erosion.	**Preferred** Reduced level of construction would reduce the severity and duration of construction-related activities in the area, including the potential for erosion.
Land Use and BLM Realty	More extensive demolition and construction. Structures would be closer to edge of ROW where sensitive receptors are located.	**Preferred** Impacts to sensitive receptors would be reduced due to a lower level of construction. Operational visual impacts would be reduced by increasing the distance of structures from sensitive receptors at the edge of the ROW.
Noise	More extensive demolition and construction results in a greater level and duration of noise impacts to sensitive receptors.	**Preferred** Reduced level of construction that is generally located farther from the edge of the ROW. The severity of the substantial adverse noise effect for the nearest sensitive receptors would be reduced since the level of construction noise attenuates with increased distance from the source. However, similar to the Proposed Project, impacts from construction noise would remain adverse to nearby sensitive receptors.
Paleontological Resources	More extensive demolition and construction.	**Preferred** Less ground disturbance would reduce the potential to adversely affect paleontological resources.
Transportation and Traffic	More extensive demolition and construction.	**Preferred** Reduced level of construction would reduce the number and duration of construction-related vehicle trips in the area.
Visual Resources	Significant and unmitigable visual impacts on sensitive receptors (residences) during both construction and operation.	**Preferred** Visual impacts reduced in some locations due to greater distance of towers from residences. Possible elimination of 66 kV line relocation along Iowa Street. If the 66 kV system must be relocated, impacts would be reduced with the Iowa Street 66 kV Underground Alternative.
Water Resources and Hydrology	More extensive demolition and construction results in a greater potential for erosion and associated impacts to water quality.	**Preferred** Reduced level of construction would reduce the severity and duration of construction-related activities in the area, including the potential for erosion.

G.5 Definition of the BLM Environmentally Preferred Alternative

All three alternatives discussed in Section G.4 are considered to be environmentally preferred to the Proposed Project. The Phased Build Alternative would have its structures located closer to the center of the ROW, and would incorporate the tower locations of the Tower Relocation Alternative. Also, under the Phased Build Alternative, the Iowa Street 66 kV Underground Alternative may not be necessary, because relocation of the 66 kV subtransmission lines may or may not be required in Segment 1. As a result, ***the Phased Build Alternative is considered environmentally preferred overall.*** This alternative may not require any 66 kV subtransmission system modifications, but the distribution, telecommunications, and substation upgrades would be the same as for the Proposed Project. The Environmentally Preferred Alternative is illustrated in Figure G-1.

The second preferred alternative would be the combination of the Tower Relocation Alternative, the Iowa Street 66 kV Underground Alternative, and the Proposed Project for the segments unaffected by those two alternatives. The least environmentally preferred would be the Proposed Project.

G.6 No Action Alternative Compared to the Environmentally Preferred Alternative

The No Action Alternative is described in Section C.6, and its impacts are presented for each discipline in Section D. The No Action Alternative defines the transmission system that may be required in the absence of the Proposed Project, defining transmission options that SCE or other developers may pursue to achieve the objectives of the Proposed Project. The events or actions that are reasonably expected to occur in the foreseeable future without the West of Devers Upgrade Project include the following:

- **No Action Alternative Option 1:** In SCE's response to Data Request 7, SCE states, "...it is unlikely that SCE and the Morongo could reach an agreement for SCE's facilities to remain on the reservation in the absence of the WOD Upgrade Project." As a result of this stated expectation, this No Action option would include removal of all SCE facilities from Morongo land, and require the development of a transmission route from the Devers Substation to the El Casco Substation that would not use Morongo land. This No Action option would require the following components:
  - Installation of about 27 miles of additional new 500 kV circuit in the Devers-Valley corridor;
  - A new Beaumont Substation (500/220 kV) that would be located southwest of Beaumont;
  - Addition of 4 new 220 kV circuits from Beaumont Substation to El Casco Substation, using 1590 ACSR conductors as proposed by SCE; and
  - West of the El Casco Substation, this option would be the same as proposed by SCE.
- **No Action Alternative Option 2:** SCE's System Alternative 2 includes the addition of a new 500 kV circuit from SCE's existing Valley Substation to its Serrano Substation, as follows:
  - **No Major Upgrades to 220 kV System West of Devers.** The SCE WOD 220 kV system would be unchanged from the current system (4 circuits with current capacity; no removal of single-circuit towers; no construction of new towers). However, as defined in the approved Morongo agreement, the 220 kV segment between the Outlet Mall and the eastern border of the City of Banning would move south from its current location to be adjacent to I-10 and would be installed on new tubular steel poles (TSPs).
  - **Retain the WOD Interim Project.** Just west of the Devers Substation, SCE has installed series reactors on the four 220 kV transmission lines that extend west of Devers Substation and a Special Protection System (SPS) to prevent overloading of the existing WOD transmission lines. This equipment would be retained in the No Action Alternative Option 2.

- **No upgrades to 500 kV Devers-Valley System and no new substation.** The existing Devers-Valley No. 1 and No. 2 circuits are currently operating well below capacity, as shown in the power flow modeling attached to Appendix 5 (Alternatives Screening Report, Attachment 2). As shown in modeled Case 2 (CAISO 2024 Reliability Base Case with an added 1,400 MW imported from the Imperial Irrigation District), each Devers-Valley 500 kV circuit would use only 44% of its capacity, leaving over 2,000 MW available.
- **New 500 kV Line from Valley to Serrano Substations.** A new single-circuit 500 kV transmission line would be constructed along approximately 40.4 miles of existing transmission corridor from SCE's Valley Substation in the City of Romoland to its Serrano Substation in the City of Orange. The existing Valley-Serrano No. 1 transmission line occupies this corridor, and was constructed in 1986. The route includes about 9 miles within the Cleveland National Forest, in a designated utility corridor, where construction would have to be completed via helicopter. Upgrades would be required at the Valley and Serrano Substation.

G.6.1 Comparison of No Action Alternative Option 1 with Proposed Project

The environmental impacts of the No Action Alternative are presented in Section D for each environmental discipline. Impacts would primarily result from the requirement to construct a third 500 kV circuit, in addition to the Devers-Valley No. 1 and No. 2 lines, between Devers and a new Beaumont Substation. The most severe impacts would be the following:

- **Visual Resources.** The 500 kV line would cross the Pacific Crest Trail, pass through the San Jacinto and Santa Rosa National Monument, and pass through the San Bernardino National Forest within a designated wilderness area (in a transmission corridor). On Forest lands, the new circuit would have to be installed on newly constructed double-circuit towers (after removal of one existing single-circuit tower), which would be highly visible due to their height. In addition, the additional circuit would pass through the community of Cabazon, and the Cities of Banning and Beaumont.
- **Biological Resources.** The route passes through sensitive desert, mountain, and inland environments, with potential to affect listed plants, Peninsular bighorn sheep, and Stevens kangaroo rat, as well as other species.
- **Land Use and Recreation.** As described for visual resources, the new line would be highly visible in several valuable recreation areas. In addition, the proximity of both construction activities and the new circuit itself, to existing residences, would result in significant impacts to sensitive receptors between Cabazon and Beaumont.

Additional significant impacts to visual and biological resources would result from the construction and operation of the new 40-acre Beaumont Substation, just southeast of the city of Beaumont.

In conclusion, No Action Option 1 would create impacts substantially more severe than those of the Proposed Project.

G.6.2 Comparison of No Action Alternative Option 2 with Proposed Project

The environmental impacts of the No Action Alternative are presented in Section D for each environmental discipline. No Action Alternative Option 2 would not require the construction and operation of a new 500 kV circuit along 25 miles of the Devers-Valley corridor (as would be required for No Action Option 1). The first option would pass through designated wilderness, residential areas, and sensitive habitats. Impacts of No Action Option 2 would primarily result from the requirement to construct a second 500 kV circuit adjacent to the Valley-Serrano No. 1 lines, between the Valley Substation and Serrano Substation. The most severe impacts would be the following:

- **Visual Resources.** The 500 kV line would cross a number of parks and recreational areas. On Forest lands, the new circuit would have to be installed on newly constructed single-circuit towers. While one circuit already exists in the utility corridor, this area is remote and undeveloped, and the addition of a second high-voltage line would be highly visible. In addition, the new line would pass through Weir Canyon Regional Park, the community of Romoland, and the City of Orange, where visibility of a new 500 kV circuit would likely be significant.
- **Biological Resources.** The route passes through sensitive mountain and inland environments, with potential to affect listed plants, birds, and Stevens kangaroo rat, as well as other species.
- **Land Use and Recreation.** As described for visual resources, the new line would be highly visible in several important recreation areas. In addition, the proximity of both construction activities and the new circuit itself, to existing residences, would result in significant impacts to sensitive receptors in both Riverside County and the City of Orange.

In conclusion, No Action Option 2 would create impacts substantially more severe than those of the Proposed Project.

G.6.3 Conclusion Regarding No Action Alternatives

Therefore, because both of the No Action Alternatives would likely require construction of transmission lines with more severe impacts than those described for the Environmentally Preferred Alternative defined in Section G.5, the No Action Alternative is not found to be preferred to the Environmentally Preferred Alternative as defined in Section G.5.

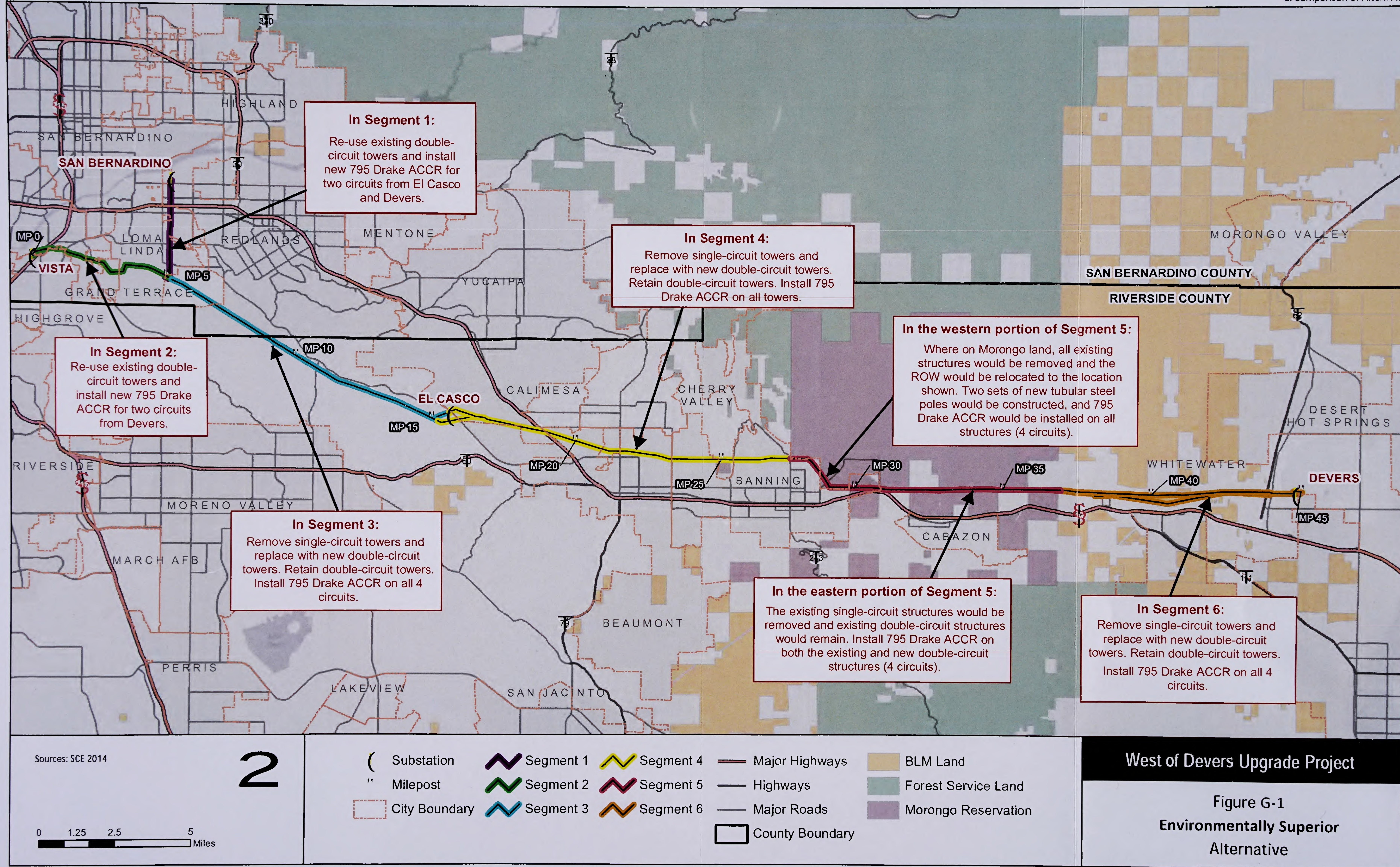

Figure G-1
Environmentally Superior Alternative

H. Mitigation Monitoring and Reporting

The BLM and the CPUC are NEPA and CEQA Lead Agencies, respectively. In that role, if the Proposed Project or an alternative is approved, they would be responsible to ensure that monitoring and reporting on required mitigation occurs.

As the Applicant and project proponent, SCE would be responsible for implementing all applicable measures, including the adopted mitigation measures and conditions of project approval, as well as conditions imposed in any permits or regulations administered by other responsible agencies.

The Mitigation Monitoring Program for the Proposed Project (or alternative) establishes the approach to implementing the mitigation measures and Applicant Proposed Measures (APMs) identified in the EIS. If the project is approved and the Mitigation Monitoring Program described below is adopted by the Lead Agencies, a detailed Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) would be developed, as described in Section H.2 below. The MMCRP would be the mechanism whereby the Lead Agencies would implement the Mitigation Monitoring Program.

Mitigation Monitoring Program tables are presented at the end of each resource's environmental analysis section of the EIS (Sections D.2 through D.21). These tables, along with the full text of the mitigation measures themselves, are central elements of the Mitigation Monitoring Program. The specified mitigation measures would be implemented through the MMCRP.

The MMCRP would be the basis for the agencies' environmental monitoring and reporting activities throughout project construction, including during site rehabilitation and restoration after construction is completed. It would detail how and when the mitigation measures would be implemented. As well, the MMCRP would identify duties and responsibilities of the various parties, communication protocols to follow, and record management requirements. The MMCRP would be prepared and instituted prior any notices to proceed (NTPs) being issued or the initiation of any construction.

H.1 Authority for the MMCRP

H.1.1 Bureau of Land Management

BLM is the federal Lead Agency for the preparation of this EIS in compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and BLM's NEPA guidance handbook (H-1790-1). As the federal Lead Agency, BLM is responsible for ensuring that adopted mitigation measures are implemented on land it administers. BLM intends to work with the CPUC in implementation of mitigation monitoring during construction of the Proposed Project, and may use the CPUC's environmental monitoring contractor for monitoring on BLM lands.

For the portions of the project on Morongo reservation land, the Bureau of Indian Affairs (BIA), as a responsible agency and in consultation with the tribe, will determine whether they would like the same contractors who are monitoring for BLM to monitor construction on reservation land.

H.1.2 California Public Utilities Commission

The California Public Utilities Code confers authority upon the CPUC to regulate the terms of service and the safety, practices, and equipment of utilities subject to its jurisdiction. It is CPUC practice, pursuant to its statutory responsibility, to protect the environment and to require that mitigation measures stipulated as conditions of approval be properly implemented, monitored, and reported on. This requirement is codified statewide as Section 21081.6 of the Public Resources Code, which requires a public agency to adopt a mitigation monitoring or reporting program, or both, when it approves a project that is subject to preparation of an EIR and where the EIR for the project identifies significant adverse environmental effects. CEQA Guidelines Section 15097 describes agency requirements for mitigation monitoring or reporting.

The purpose of an MMCRP is to ensure that the measures adopted to mitigate or avoid significant impacts of a project are implemented, and to report on their implementation. The CPUC views the MMCRP as a working guide to facilitate implementation of mitigation measures imposed by the approving agencies measures and any measures proposed by the project proponent, and to provide for the monitoring, compliance, and reporting activities of the CPUC and its designated monitors.

The CPUC will address its responsibilities under Public Resources Code Section 21081.6 when it takes action on SCE's application for a Certificate of Public Convenience and Necessity. If the Commission approves the Proposed Project or an alternative, it also will adopt a Mitigation Monitoring Program and include the mitigation measures as a condition of approval.

H.2 Organization of the MMCRP

If the Proposed Project or an alternative is approved, the BLM and CPUC would compile the Final Mitigation Monitoring Program and include it in the Final EIS, as adopted. Based on the monitoring program, the MMCRP would be prepared and would serve as a self-contained guide for implementing the program throughout project construction.

The Final MMCRP would contain a concise overview and description of the approved project, outline its physical locations and geographic limits, and, to the extent known, provide the project schedule. It would include all adopted mitigation measures and would specify the master reference document(s) that the monitors and the Applicant would use in carrying out the program (e.g., the Final EIS, detailed working maps and plans, issued permits, etc.). The APMs to which SCE has committed would be incorporated to the extent they have not been superseded by specific mitigation measures in the EIS.

The MMCRP would include a list of the agencies having jurisdiction over various aspects of the project, and a description of where these respective jurisdictions occur. For example, the MMCRP would state which California Department of Fish and Wildlife regional office has jurisdiction and provide contact information, including the designated representative's name, address, email, and telephone and fax numbers.

The MMCRP would also include definition of the manner in which SCE's monitoring team would interact with the BLM and CPUC staff and consultants. In addition, the MMCRP would define SCE's required submittals to the agencies, and protocol for interactions among agency and SCE team members.

The MMCRP would be structured as follows:

A. Introduction

- Authority and Purpose of the Program
- Jurisdictional Agencies
- Project Description
- Organization of the MMCRP

B. Roles and Responsibilities

- Monitoring Responsibility
- Enforcement Responsibility
- Mitigation Compliance Responsibility
- Communications
- Dispute Resolution
- SCE Roles
  - Identification of the qualified SCE team members who would verify that all adopted measures and conditions have been successfully implemented.
  - Organization of the SCE team, including specifying duties, roles, and responsibilities.
  - Identification of primary SCE contacts for BLM/CPUC environmental monitoring staff liaison.

C. General Monitoring and Compliance Procedures

- Environmental Monitors
- Construction Personnel
- General Reporting Requirements
  - SCE Compliance Levels for internal reporting
  - SCE Daily Incident Summary format and protocol
  - SCE Weekly Monitoring Report format and content
  - SCE Annual Monitoring Report format and content
- Records Management and Public Access to Records

D. Mitigation Measure Tables

H.3 Roles and Responsibilities

Responsibility for *implementing* the adopted measures rests with SCE, unless otherwise specified in the measure.

As Lead Agencies under NEPA and CEQA, the BLM and CPUC are responsible to *monitor* an approved project to ensure that required mitigation measures and APMs are implemented. The required Mitigation Monitoring Program would be implemented through the MMCRP. The purpose of the Mitigation Monitoring Program is to document that the mitigation measures required by the BLM and CPUC are implemented and that mitigated environmental impacts are reduced to the level identified in the EIS.

The BLM and/or CPUC may delegate duties and responsibilities for monitoring to environmental monitors or consultants working on behalf of the agencies. As well, some monitoring responsibilities may be assumed by responsible agencies, where areas or resources under their jurisdiction are potentially affected or involved.

SCE would deploy its own monitors for its own purposes, to ensure implementation of its commitments and execution of its responsibilities. The number of SCE construction monitors assigned to the project would be determined by the utility and would depend on the number of concurrent construction activities underway, their locations, and the types of resources potentially affected. The CPUC and BLM would ensure that persons assigned monitoring duties by SCE are qualified to undertake those duties.

When a mitigation measure requires that a study or plan be developed during the design or pre-construction phase of the project, SCE must submit the final study or plan to BLM and CPUC for review and approval. Any study or plan that requires approval of the BLM and CPUC must allow at least 60 days for adequate review. Other agencies and jurisdictions with authority over aspects of the project or particular resources may require additional review time. It would be the responsibility of the BLM/CPUC environmental monitoring team to confirm that appropriate opportunities for agency reviews have occurred and required approvals obtained.

During the course of construction, circumstances may arise that require deviations from the project as approved. The BLM and CPUC, along with their environmental monitors, would evaluate any proposed deviations from the approved project to ensure they are consistent with NEPA and CEQA requirements. Depending on its nature, a requested deviation would be processed as a Minor Project Change (MPC) or be the subject of a Petition for Modification (PFM) submitted by the Applicant.

MPCs would be strictly limited to minor project changes that do not trigger additional permit requirements, do not increase the severity of an impact or create a new impact, and are within the geographic scope of the EIS.

If a project change would create or have the potential to create a new significant impact, increase the severity of an impact, or occur outside the geographic area evaluated in the EIS, the Applicant would be required to submit a PFM. The BLM and/or CPUC would evaluate the PFM under NEPA and/or CEQA, as appropriate to determine what form of supplemental environmental review would be required.

H.3.1 Enforcement Responsibility

The BLM and CPUC would be responsible for monitoring implementation of the MMCRP and enforcing the procedures adopted. Generally, this would be done through the Environmental Monitors assigned by the agencies. In addition, if the agencies' Environmental Monitors note conditions or situations falling within the purview of other agencies, they may notify the appropriate agencies or individuals about any problems, and report these to the BLM and CPUC.

As the State' regulator of investor-owned utilities, CPUC has the authority to halt any construction, operation, or maintenance activity associated with the project if the activity is determined to be a deviation from the approved project or the adopted mitigation measures. Likewise, the BLM has authority over activities on land under its jurisdiction.

H.3.2 Compliance Responsibility

SCE would be responsible for successfully implementing all the adopted mitigation measures in the MMCRP. The MMCRP would contain criteria that define whether mitigation is successful. Standards for successful mitigation also are implicit in many mitigation measures that include such requirements as obtaining permits or avoiding a specific impact entirely. Other mitigation measures include success criteria that are listed in a table at the end of each resource impact evaluation section of the EIS. Additional mitigation success thresholds may be established through the review and approval of specific plans required under mitigation measures and by another agency with applicable jurisdiction during that agency's permitting process.

SCE would inform CPUC/BLM and the Environmental Monitors in writing of any mitigation measures that are not or cannot be successfully implemented and provide alternative approaches for successful mitigation implementation. The BLM and CPUC, in coordination with their Environmental Monitors, would review the alternative approach to determine if it is adequate and whether an MPC or PFM would apply.

H.4 Dispute Resolution

It is expected that the Final MMCRP would greatly reduce or eliminate potential disputes. However, even with the best preparation, disputes may occur. In such an event, the following procedure would be observed:

- **Step 1.** Disputes and complaints (including those from the public) should be directed first to the BLM and/or CPUC's Project Manager or designee, as appropriate, for resolution. The Project Manager or designee would attempt to resolve the dispute. If the dispute can be resolved by SCE then the BLM and/or CPUC's Project Manager or designee would direct the person to SCE. If the complaint is received by SCE's public liaison person and/or toll-free information hotline, the complaint would be handled by SCE in accordance with Mitigation Measure LU-1a (Prepare construction notification plan).
- **Step 2.** Should this informal process fail, the CPUC and/or BLM Project Manager may initiate enforcement or compliance action to address deviations from the approved project or adopted Mitigation Monitoring Program.

The following steps apply to the CPUC only:

- **Step 3.** If a dispute or complaint regarding the implementation or evaluation of the Mitigation Monitoring Program or the mitigation measures cannot be resolved informally or through enforcement or compliance action by the CPUC, any affected participant in the dispute or complaint may file a written "notice of dispute" with the CPUC's Executive Director. This notice should be filed expeditiously in order to resolve the dispute in a timely manner, with copies concurrently served on other affected participants. Within 10 days of receipt, the Executive Director or designee(s) shall meet or confer with the filer and other affected participants for purposes of resolving the dispute. The Executive Director shall issue an Executive Resolution describing his/her decision, and serve it on the filer and other affected participants.
- **Step 4.** If one or more of the affected parties is not satisfied with the decision as described in the Resolution, they may appeal it to the Commission via a procedure to be specified by the Commission.

Parties may also seek review by the Commission through existing procedures specified in the Commission's Rules of Practice and Procedure for formal and expedited dispute resolution, although a good faith effort should be made to use the foregoing procedure first.

H.5 General Monitoring Procedures

H.5.1 Environmental Monitors

Many of the monitoring procedures would be conducted during the construction phase of the project. The BLM, CPUC, and Environmental Monitors are responsible for integrating the mitigation monitoring procedures into the construction process in coordination with SCE. To oversee the monitoring procedures and to ensure success, the Environmental Monitors assigned must be onsite during construction activity having the potential to create a significant environmental impact or other impact for which mitigation is required. The Environmental Monitors are responsible for ensuring that all procedures specified in the monitoring program are followed.

H.5.2 Construction Personnel

A key element in the success of mitigation and mitigation monitoring is the full cooperation of construction personnel and supervisors. Successful implementation of many of the mitigation measures requires specific actions and behaviors on the part of the construction supervisors or crews. To ensure success, the following actions, detailed in specific mitigation measures included in the MMCRP, would be taken:

- Procedures to be followed by construction companies engaged to do the work would be written into their contracts with SCE.
- As specified by mitigation, a Worker Environmental Awareness Program (WEAP) would be conducted to inform and train construction personnel about the requirements of the monitoring program (as detailed in the MMCRP). The BLM/CPUC Environmental Monitors would verify that each crew member received the required training.
- A written summary of mitigation monitoring procedures would be provided to construction supervisors for all mitigation measures requiring their attention.

H.5.3 Reporting Procedures

Detailed weekly reports would be prepared and submitted by the BLM/CPUC environmental monitoring team. These would include detailed information on construction activities, compliance activities observed by the Environmental Monitors and others documented by SCE, any issues and their resolution, and photographs of relevant activities and conditions.

SCE is required to have its own monitors for particular resources, depending on project needs and activities. These monitors provide daily reports/surveys that are entered into SCE's field record environmental database (FRED) system. It is assumed that FRED or a similar database would be employed on this project. BLM/CPUC Environmental Monitors would have access to the reports. Construction is not allowed to start in a particular area until the required pre-construction surveys and flagging/staking are completed per the MMCRP, and the BLM/CPUC environmental monitor has validated compliance.

SCE is to provide the BLM and CPUC with written weekly and annual reports of the project, which shall include progress of construction, resulting impacts, mitigation implemented, and all other noteworthy elements of the project.

H.5.4 Public Access to Records

The public is allowed access to records and reports used to track the monitoring program. Monitoring records and reports prepared by the CPUC and BLM, or officially transmitted to the CPUC and BLM by SCE, would be made available for public inspection by the CPUC and BLM on request. The CPUC, the BLM, and SCE would develop a filing and tracking system. For additional information on mitigation monitoring and reporting for the project, the Energy Division of the CPUC would maintain an Internet website, accessible at:

http://www.cpuc.ca.gov/environment/info/aspen/westofdevers/westofdevers.htm.

To facilitate the public's awareness, the CPUC would make weekly reports available on the website.

I. Public Participation and Consultation

I.1 Introduction

This section describes the public participation program implemented for the WOD Upgrade Project. This program was designed to collect agency and public input for the Proposed Project and to inform the environmental review process. Sections I.2 through I.7 describe aspects of the NEPA and CEQA processes related to preparation of the Draft EIR/EIS, Final EIS and the public involvement in various steps. Section I.8 describes the BLM consultation process related to the Endangered Species Act, the National Historic Preservation Act Section 106 process, and the government-to-government consultation process with Native American tribes.

I.2 EIR/EIS Scoping Process

The scoping process for the Draft EIR/EIS consisted of five elements, detailed in the following sections:

1. Publication of the CEQA Notice of Preparation (NOP) and the NEPA Notice of Intent (NOI) of a joint EIR/EIS and Notice of Public Scoping Meetings soliciting comments from affected public agencies and concerned members of the public.
2. Hosting of public scoping meetings and meetings with agencies.
3. Summarizing scoping comments in a CPUC Scoping Report and a BLM Scoping Report.
4. Posting of the CPUC and BLM Scoping Reports on the project website and distribution of the reports to the EIR/EIS team members for use in work planning and impact analysis.
5. Establishment of an Internet website, an electronic mail address, a telephone hotline, and local EIR/EIS Information Repositories.

I.2.1 Notice of Preparation and Notice of Intent

The CPUC issued the NOP on May 12, 2014, distributing it to the State Clearinghouse, federal, State, regional, and local agencies, elected officials of affected areas, and the general public. The CPUC mailed approximately 13,300 copies of the NOP to federal, State, regional, and local agencies, and elected officials, community and environmental organizations, Native American groups, and property owners. The mailing list included the following distribution: approximately 140 agency representatives (from approximately 70 agencies); approximately 40 environmental groups and organizations; 5 tribal government representatives from 2 different tribal governments; approximately 30 elected officials; approximately 12,600 property owners within 600 feet of the project route alignment; and approximately 420 other interested parties. Fourteen additional copies of the NOP were delivered to and are available at 14 local document repository sites. The 30-day public scoping period extended from the issuance of the NOP to June 12, 2014.

The BLM published the NOI on July 1, 2014 in the Federal Register. A notice of Public Scoping Meeting was mailed to all parties on the EIR/EIS mailing list. The 30-day comment period began on July 1, 2014 and extended to July 31, 2014.

I.2.2 Scoping Meetings

In May 2014, the CPUC held 4 public scoping meetings in three locations to collect input for the scope and content of the EIR/EIS and for alternatives and mitigation measures to consider.

Approximately 40 members of the public and representatives from organizations and government agencies attended the following May 2014 meetings:

- May 19, 2014, at 6:00 pm in Banning City Hall, City of Banning
- May 20, 2014, at 6:00 pm in the Loma Linda Civic Center, City of Loma Linda
- May 21, 2014, at 3:00 pm and 7:00 pm in the Beaumont Civic Center, City of Beaumont

On July 16, 2014, the BLM held a scoping meeting in the City of Banning. Approximately 15 members of the public and representatives from organizations and government agencies attended the following BLM scoping meeting:

- July 16, 2014 at 2:00 pm in Banning City Hall, City of Banning

I.2.3 CPUC Scoping Report

The CPUC issued its Scoping Report in July of 2014. The report summarized issues of concern based on 36 written and oral comments from agencies, organizations, and members of the public. A summary of the key issues that were raised is presented below.

Aesthetics/Visual

Several commenters expressed concern with the height of the new towers and stated that the added bulk and higher towers would be highly visible from residences and public roadways. A number of commenters also suggested that the lines be undergrounded in certain areas to address visual impacts as well as safety impacts. Visual simulations were requested as part of the aesthetics assessment.

Conflicts with Existing Land Uses

Some of the cities noted that the WOD project could impact their existing plans for development and could impact anticipated road improvement projects. The project bisects the Colorado River Aqueduct, and thus, there was some concern that the project could impact the ongoing operation, maintenance, and repair of the aqueduct. The Metropolitan Water District requested that design plans be reviewed and approved by them and that the EIR/EIS consider potential impacts to the aqueduct.

The project's potential to impact recreational uses in the Cities of Colton and Grand Terrace were identified as key concerns that should be evaluated in the EIR/EIS. The connectivity of recreational areas between the two cities was an issue that was identified and that the cities requested be evaluated in the EIR/EIS. Several commenters raised a concern with the placement of the towers closer to existing homes and wanted to know why SCE could not place the towers further away from existing residences.

Property Values

Commenters expressed concern with the project's impact on property values because of towers being moved closer to homes and businesses and the impact of bulkier, taller towers.

Fire Risk, EMF, and Other Hazards

Several commenters expressed concern with the potential of the project to increase fire risk and suggested the requirement for mitigation measures such as an emergency response plan and undergrounding of the transmission line. Southern California Gas noted that the project crosses a number of their pipelines and suggested that SCE contact Underground Service Alert prior to excavating in the project area. Several concerns were raised regarding the use of the transmission corridor easement and whether or not it was safe for recreational or other uses.

Construction-Related (Dust, Noise, Traffic)

Commenters expressed concern with construction dust especially in high wind areas and requested that dust suppression measures be included in the EIR/EIS. Local agencies also asked about where or not SCE would be required to abide by local requirements with regard to construction hours and noise standards. Some of the cities were concerned with traffic on local roads and the potential for damaging local roads and increasing traffic. More information was requested on anticipated truck routes on the different project segments, and a there was a request for requiring SCE to coordinate with local agencies on the construction schedule as well as requiring SCE to repair any damage to local roads. Several commenters requested that the EIR/EIS consider the impact of road closures and limited access to residences, residential streets, and businesses.

Geology/Slope Stability

In the City of Grand Terrace, the Cities of Colton and Grand Terrace expressed concern regarding towers that are currently on unstable soil and near an area that resulted in a deck collapsing from slope failure. Slope stability and erosion should be addressed.

Biological Resources

One of the main issues presented regarding biological resources was the need for the EIR/EIS to evaluate the project's consistency with the two Multiple-Species Habitat Conservation Plans that are in effect in the project area. Another request was to assess potential impacts to California gnatcatcher and its habitat in Segment 2 and a request to identify mitigation for habitat impacts.

Other Comments

Five written comment letters (representing nine energy companies) and one commenter at the public scoping meeting addressed concern with curtailment of existing renewable energy production. These commenters expressed concern with SCE curtailing or reducing existing electrical generation for several years while the WOD project is being constructed. They requested compensation for this anticipated curtailment period and requested that this issue be discussed in the EIR/EIS. One commenter expressed concern with "piecemealing" and stated that the WOD project alignment is one of the alternatives (Northerly Route) identified and rejected in the evaluation of the El Casco Substation EIR.

I.2.4 BLM Scoping Report

The BLM held an additional scoping period, as described above, and a Scoping Report was released in October of 2014. The report summarized issues of concern based on 18 written and oral comments from agencies, organizations, and members of the public. A summary of the key issues that were raised is presented below.

Aesthetics/Visual

One commenter requested that the applicant consider the aesthetics of the neighborhood when building towers.

Conflicts with Existing Land Uses

The project bisects the Colorado River Aqueduct, and thus, there was some concern that the project could impact the ongoing operation, maintenance, and repair of the aqueduct. The Metropolitan Water District requested that design plans be reviewed and approved by them and that the EIR/EIS consider potential impacts to the aqueduct. The California Department of Water Resources noted that permits may be required if any improvements encroach on the Colorado River Aqueduct right-of-way.

Several commenters raised a concern with the placement of the towers closer to existing homes and wanted to know why SCE could not place the towers farther away from existing residences. One commenter noted that they appreciated that the transmission towers would be placed far from the Interstate 10 freeway and not on the hillsides.

Social/Economic

Commenters expressed concern with the project's impact on property values because of towers being moved closer to homes. Commenters expressed concern with security/safety and general wellbeing when living near an electrical transmission corridor.

Fire, EMF, and Other Hazards

CAL FIRE noted that the area has a history of wildfires and requested to be notified of construction activities and suggested that a plan be put in place to coordinate a response to fires if helicopters will be used in construction. Several concerns were raised regarding the safety of the transmission lines especially if they are placed closer to homes and wanted to know if the lines would increase the potential for exposure to EMF with the new towers. One commenter requested that the EIR/EIS study the potential health risks associated with transmission towers. One commenter stated that he wanted to see measures that address survival of the transmission lines when under terrorist bombs or other disaster designed to wipe out the electrical grid.

Construction-Related (Dust, Traffic)

Commenters expressed concern with construction dust and requested that dust suppression measures be included in the EIR/EIS. Some commenters expressed concern with the potential for damaging local roads and increasing traffic.

Biological Resources

The California Department of Fish and Wildlife requested a thorough evaluation and mitigation of impacts to sensitive species in the project area and also asked for the EIR/EIS to consider the two Multiple-Species Habitat Conservation Plans that are in place in the project area. Another request was for the EIR/EIS to evaluate the project's impact on common ravens, red-tailed hawks, and golden eagles. In the evaluation of these species, the commenter asked that other issues be taken into consideration, such as global warming.

I.3 Draft EIR/EIS Public Review Period

The Draft EIR/EIS was available for public review from August 7, 2015 to September 22, 2015 (a 45-day period). The start and end dates of the review period were included in the Notice of Availability (NOA), which was attached to the Draft EIR/EIS. The locations and dates of public workshops for the Draft EIR/EIS were also listed in the NOA.

Copies of the full Draft EIR/EIS and Appendices were sent to approximately 40 interested parties and agencies, and to 14 libraries and agency offices used as document repositories. Nearly 200 copies of the Executive Summary and CDs with the text of the Draft EIR/EIS were also sent out. Additional copies of the Executive Summary and of the CDs with the text of the Draft EIR/EIS were distributed at the public workshops in August and September 2015.

Newspaper Notices, including information on the Draft EIR/EIS, the project website address, and the dates and times of the Informational Workshops were printed in August 2015 in the following papers: The Press-Enterprise, San Bernardino Sun, Redlands Daily Facts, and The Desert Sun.

Table I-1 shows the public workshops that were held to provide information and hear comments on the Draft EIR/EIS. Approximately 15 members of the public, including representatives of organizations and government agencies were documented in attendance at the public workshops. The comments received by the CPUC and BLM during the public review period and at the public workshops are reproduced in this Final EIS along with responses to comments (see Volume 4).

Table I-1. Public Workshops on Draft EIR/EIS

Location	Beaumont, CA	Beaumont, CA	Banning, CA
Day & Date	Wednesday, August 26, 2015	Wednesday, August 26, 2015	Tuesday, September 1, 2015
Time(s)	2:00 to 4:00 PM	6:00 to 8:00 PM	7:00 to 9:00 PM
Address	Holiday Inn Express 1864 Oak Valley Village Circle Beaumont, CA 92223	Holiday Inn Express 1864 Oak Valley Village Circle Beaumont, CA 92223	City Council Chambers 99 E. Ramsey Street Banning, CA 92220

I.4 EIR/EIS Mailing List

The initial EIR/EIS mailing list included SCE's list of property owners within 600 feet of the Proposed Project as well as groups and individuals that the EIR/EIS team identified as stakeholders or interested parties the Proposed Project. In addition, all attendees at scoping meetings were added to the mailing list. The mailing list also includes all individuals on the CPUC's proceeding service list for this application. The complete mailing list for the Final EIS is presented in Appendix 13, Recipients of EIS.

I.5 Notice of Availability

All those on the EIR/EIS Mailing List and landowners on or adjacent to SCE's proposed route and the alternative routes received a Notice of Availability of the CPUC's Final EIR on December 11, 2015, and will receive notification upon release of the Final EIS by BLM. The BLM Notice will include information on accessing the Final EIS, the Environmentally Preferred and Agency Preferred Alternative(s), and a summary of the CPUC and BLM decision processes.

I.6 EIS Information and Repository Sites

The BLM and CPUC have established a telephone hotline for project information: (888) 456-0254. This line can receive faxes and voice messages. Environmental review information, including Proposed Project information, the BLM and CPUC Scoping Reports, the Draft EIR/EIS, the CPUC's Final EIR, the BLM's Final EIS, and other information on the environmental review process will be available on the CPUC project website:

http://www.cpuc.ca.gov/environment/info/aspen/westofdevers/westofdevers.htm

This site hosts all public documents during the environmental review process and presented announcements of public meetings.

In addition to the CPUC project website, the BLM hosts a project website that contains various project documents, including: the Notice of Intent; the Notice of Availability of the Draft EIS; the Draft EIS; the Notice of Availability of the Final EIS; the Final EIS; the Record of Decision; and the Right-of-Way Grant. The BLM project website is located here:

http://www.blm.gov/ca/st/en/fo/palmsprings/transmission/WestOfDeversProject.html

To maximize accessibility of project information to the public, the CPUC and BLM have placed documents in repository sites listed in Table I-2. All notices and the Draft EIR/EIS have been provided to 14 repositories and documents are also available at the CPUC in San Francisco.

Table I-2. Project Document Repository Sites

West of Devers – Library Sites		
City of Riverside Library	3581 Mission Inn Avenue, Riverside, CA 92501	(951) 826-5201
San Bernardino County Library	777 East Rialto Avenue, San Bernardino, CA 92415	(909) 387-5723
Colton Public Library	656 N. Ninth Street, Colton, CA 92324	(909) 370-5083
Grand Terrace Library	22795 Barton Road, Grand Terrace, CA 92313	(909) 783-0147
City of Loma Linda Library	25581 Barton Road, Loma Linda, CA 92354	(909) 796-8621
A.K. Smiley Public Library	125 West Vine Street, Redlands, CA 92373	(909) 798-7565
Mentone County Library	1331 Opal Avenue, Mentone, CA 92359	(909) 794-2657
Yucaipa Branch Library	12040 5th Street, Yucaipa, CA 92399	(909) 790-3146
Calimesa City Library	974 Calimesa Boulevard, Calimesa, CA 92320	(909) 795-9807
Beaumont Library District	125 East 8th Street, Beaumont, CA 92223	(951) 845-1357
Banning Public Library	21 W Nicolet Street, Banning, CA 92220	(951) 849-3192
Morongo Band of Mission Indians Environmental Protection Dept.	12700 Pumarra Road, Banning, CA 92220	(951) 755-5128
West of Devers – U.S. Bureau of Land Management Office		
Palm Springs/So. Coast Field Office	1201 Bird Center Drive, Palm Springs, CA 92262	(760) 833-7100
California Desert District Office	22835 Calle San Juan de los Lagos, Moreno Valley, CA 92553	(951) 697-5200

I.7 Consultation Processes for ESA Section 7, NHPA Section 106, and Indian Tribes

I.7.1 Endangered Species Act Section 7 Consultation

The USFWS has jurisdiction to protect threatened and endangered species under the Federal Endangered Species Act (ESA, 16 USC §1531 et seq.). Formal consultation with the USFWS under Section 7 of the ESA is required for any federal action that my adversely affect a federally listed species. This consultation has been initiated through a request by the BLM to the USFWS. The next steps involve BLM's submittal of a Biological Assessment (BA) to the USFWS. Following review of the BA, the USFWS would be expected to issue a Biological Opinion that specifies mitigation measures that must be implemented for any protected species.

I.7.2 National Historic Preservation Act Section 106 Consultation

Federal agencies must demonstrate compliance with the National Historic Preservation Act (NHPA) [16 USC §470 et seq.]. Section 106 of the NHPA requires a federal agency with jurisdiction over a project to evaluate the effect of the proposed project on properties included on, or eligible for, the National Register of Historic Places (NRHP). Federal agencies must also provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the effects of a proposed project to those properties. Recent amendments to the regulations implementing Section 106 of the NHPA strengthened tribal involvement in the process (see Section I.8.3, Tribal Consultation).

Any adverse effects that the project may have on historic properties would be resolved through compliance with the terms of a Memorandum of Agreement (MOA) under Section 106 of the NHPA (16 USC §470). Implementation of the project also requires local and state agencies to demonstrate compliance with CEQA, for which specific guidance regarding cultural resources is presented in Appendix G of the State CEQA Guidelines. Local agencies may use the NHPA process to demonstrate compliance with those CEQA requirements.

As described in Section D.7 (Cultural Resources), the assessment of impacts on cultural resources assumes the implementation of those measures incorporated into the project design or required by regulation which avoid or reduce potentially adverse effects. A proposed action would normally have an adverse effect on cultural resources if it would disrupt or adversely affect a historic property, including a property with traditional cultural significance (as determined by the NRHP and the NHPA's implementing regulations).

The basic steps in the Section 106 process are described below along with a corresponding summary paragraph presenting BLM's compliance with the process to date:

Step 1: Identification and Evaluation of Historic Properties (Cultural Resources). Properties within a project's area of potential effect (APE) are identified with input from the State Historic Preservation Officer (SHPO), Indian tribes and other consulting parties, and evaluated for eligibility to the NRHP in consultation with the SHPO (36 CFR §800.4). BLM applies NRHP criteria for eligibility for listing (36 CFR §60.4), in conformance with the Secretary of the Interior's Standards and Guidelines for Evaluation (48 Federal Register 44723-44726). In general, NRHP eligibility criteria include:

> *The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*

- *That are associated with events that have made a significant contribution to the broad patterns of our history; or*
- *That are associated with the lives of persons significant in our past; or*
- *That embody the distinctive characteristics or a type, period, method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
- *That have yielded, or may likely yield, information important in prehistory or history.*

Step 2: Assessment of Effects. BLM determines whether or not the undertaking will affect historic properties listed in or eligible for the NRHP (36 CFR § 800.4(d)). BLM must seek concurrence from the SHPO, or Tribal Historic Preservation Officer (THPO) when appropriate, if it determines that no historic properties will be affected. When BLM determines that historic properties will be affected, BLM must assess whether such effects will be adverse by applying the criteria outlined in Title 36 of the Code of Federal Regulations (36 CFR §800.5[a(1)]). "Effect" is defined in the regulations as an "alternative to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 CFR §800.16[i]). An effect is deemed to be adverse if the effect may "alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association" (36 CFR § 800.5[a(1)]).

In the case of the proposed WOD project, all efforts have been made to avoid direct effects to cultural resources.

Step 3: Resolution of Adverse Effects. Through consultation with the SHPO, Indian tribes, other consulting parties, and the ACHP, if they elect to participate in Section 106 consultation, BLM will seek to resolve potential adverse effects of the Proposed Project through a MOA or Programmatic Agreement (PA) (36 CFR §800.6). The purpose of consultation is to develop treatment measures to avoid, resolve, or minimize potential adverse effects to historic properties, which will be implemented through the MOA or PA. The MOA often includes a treatment plan that takes into account the effects on NRHP-eligible resources, depicts the APE, discusses reporting requirements, addresses discoveries and unanticipated effects, specifies curation requirements, and provides several administrative provisions. Consulting parties, including Indian Tribes (as appropriate), would be invited to participate in this consultation and the development of the MOA, and could be invited to sign the MOA as concurring parties. BLM must notify the ACHP of its adverse effect determination and intention to resolve such adverse effects through an MOA or PA. ACHP may elect to participate in consultation for the MOA or PA. BLM, SHPO, and the ACHP, if it has elected to participate, must sign the MOA or PA.

On August 22, 2014, the BLM sent a letter to the Advisory Council on Historic Preservation (ACHP) to initiate consultation with the ACHP of the Proposed Project and invite the ACHP to participate with the BLM in the Section 106 review.

On October 7, 2015, the BLM sent a letter to the SHPO, summarizing the Cultural Resources Studies completed and the status of Tribal Consultation. The letter also sought concurrence on the determination that the project would have no adverse effects on historic properties.

I.7.3 BLM's Government-to-Government Consultation with Indian Tribes

The BLM consults with Indian Tribes on a government-to-government basis in accordance with several authorities, including NEPA, the NHPA, the American Indian Religious Freedom Act, and Executive Order 13007. Under Section 106 of the NHPA, the BLM consults with Indian Tribes as part of its responsibilities to identify, evaluate, and resolve adverse effects on historic properties affected by BLM undertakings.

- On June 27, 2013, SCE sent contact letters requesting input on the Proposed Project to tribal representatives that were identified by the Native American Heritage Commission as having an interest in or information about the Proposed Project area.
- On May 20, 2014, the BLM sent out letters to 14 tribal government representatives to initiate government-to-government consultation for this project. The letters provided initial notification regarding the project, explained the role of the BLM, and invited the tribal governments to enter into government-to-government consultation.
- On August 22, 2014, the BLM sent out follow-up letters to tribal government representatives to provide an update on efforts to identify historic properties that may be affected by the Proposed Project, to provide notification of archaeological site testing, and to reiterate the BLM's invitation and request to engage in government-to-government consultation.
- In May 2015, the BLM sent follow-up letters to tribal government representatives to provide copies of all cultural resource documents prepared for the Proposed Project and an update on cultural resource efforts. The tribes were invited to a consultation meeting to discuss identification of historic properties and potential project effects.
- On June 17, 2015, a meeting was held to present findings of the cultural studies to tribes. It was attended by members of the Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians, Pauma-Yuima Band of Mission Indians, San Manuel Band of Mission Indians, and Soboba Band of Luiseno Indians. The BLM requested formal written comments on the evaluation of the cultural resources by July 15, 2015. No comments were received.

J. Glossary, Acronyms, Abbreviations

100-Year Flood – A stream flow caused by a discharge that is exceeded, on the average, only once in 100 years. A 100-year flood has a 1% chance of occurrence in any given year.

AAQS – Ambient Air Quality Standard; a federal and state measure of the level of air contamination that is not to be exceeded in order to protect human health.

AB – Assembly Bill.

AC – Alternating current.

ACE – Assessment of Chemical Exposure.

ACEC – Area of Critical Environmental Concern – Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards (FLPMA Section 103 (a), 1976).

ACHP – U.S. Advisory Council on Historic Preservation.

ACOE – U.S. Army Corps of Engineers.

Acre-foot – A unit of measure for water demand and supply. The volume of 1 acre-foot would cover 1 acre to a depth of 1 foot and is equal to 325,851 gallons.

ACSR – Aluminum Conductor, Steel Reinforced.

Air Quality Standard – The specified average concentration of an air pollutant in ambient air during a specified time period, at or above which level the public health may be at risk; equivalent to AAQS.

Algae – A collective term for several taxonomic groups of primitive chlorophyll-bearing plants which are widely distributed in fresh and salt water and moist lands. This term includes the seaweeds, kelps, diatoms, pond scums, and stoneworts.

ALJ – Administrative Law Judge.

ALS – Advanced life support.

Ambient Air – Any unconfined portion of the atmosphere; the outside air.

Ambient Noise Level – Noise from all sources, near and far. ANL constitutes the normal or existing level of environmental noise at a given location.

AMR – American Medical Response.

ANSI – American National Standards Institute.

APE – Area of Potential Effect.

APM – Applicant Proposed Measure.

APN – Assessor Parcel Number, given to a parcel, or a specified area, of land by County tax assessors.

AQMP – Air Quality Management Plan.

ARB – Air Resources Board.

ARLs – Additional Reserve Lands.

ARMC – Arrowhead Regional Medical Center.

ARPA – Archeological Resources Protection Act.

ATC – Authority to Construct. A permit required by local air quality regulatory agencies before construction of a major emission source is started.

ATCM – Airborne Toxic Control Measures.

Average – As a measure, the sum of the measurements (over a specified period) divided by the number of measurements.

B.P. – Before Present.

BA – Biological Assessment.

Backfill – Earth that is replaced after a construction excavation.

Backhoe – A self-propelled machine with an arm equipped with a toothed shovel that scoops earth as the shovel is pulled toward the machine.

BACT – Best Available Control Technology – The most improved devices or air emission reduction technology currently available for controlling pollutant emissions.

Baseline – A set of existing conditions against which change is to be described and measured.

Berm – A narrow shelf, path, or ledge typically at the top or bottom of a slope; also, an earthen, mounded wall.

BGEPA – Bald and Golden Eagle Protection Act.

BIA – Bureau of Indian Affairs.

BLM – Bureau of Land Management, an agency of the U.S. Department of the Interior and NEPA Lead Agency for this EIR/EIS.

BMP – Best Management Practice.

BNSF – Burlington Northern Santa Fe.

BO – Biological Opinion.

CAA – Clean Air Act.

CAAA – Clean Air Act Amendments.

CAAQS – California Ambient Air Quality Standard; see AAQS.

CAGN – Coastal California gnatcatcher.

CAISO – California Independent System Operator.

CalEPA – California Environmental Protection Agency.

CALFIRE – California Department of Forestry and Fire Protection.

Cal-IPC – California Invasive Plant Council.

Caltrans – California Department of Transportation.

CARB – California Air Resources Board, sometimes abbreviated as ARB.

Cathodic Protection – An anticorrosion technique for metal installations; pipelines, tanks, and buildings in which weak electric currents are established to offset the current associated with metal corrosion.

CBC – California Building Code.

CCR – California Code of Regulations.

CDCA – California Desert Conservation Area.

CDF – California Department of Forestry and Fire Prevention.

CDFG – California Department of Fish and Game.

CDFW – California Department of Fish and Wildlife.

CDMG – California Division of Mines and Geology.

CDPH – California Department of Public Health.

CEC – California Energy Commission.

CEC – Certificate of Environmental Compatibility (Arizona permitting process under Arizona Corporation Commission).

CEE – Customer Energy Efficiency.

CEQ – Council on Environmental Quality.

CEQA – California Environmental Quality Act.

CESA – California Endangered Species Act.

CFR – U.S. Code of Federal Regulations.

CGS – California Geological Survey.

CIWMB – California Integrated Waste Management Board.

Class I – Significant impact; cannot be mitigated to a level that is not significant.

Class II – Significant impact; can be mitigated to a level that is not significant.

Class III – Adverse impact, but not significant.

Class IV – Beneficial impact.

CNDDB – California Natural Diversity Database.

CNEL – Community Noise Equivalent Level; the averaging of noise levels on a measurement scale of decibels that increases the actual noise measurement, to account for an increased sensitivity to noise during late evening, nighttime, and morning hours (the increments are 5 dB from 7 to 10 p.m. and 10 dB from 10 p.m. to 7 a.m.).

CNPS – California Native Plant Society.

CO – Carbon Monoxide; a colorless, odorless, toxic gas produced by incomplete combustion of carbon in fossil fuels.

COD – Chemical Oxygen Demand; the free oxygen–removing (combining) capability of chemical substances in liquid.

Concentration – The relative content of a component (as dissolved or dispersed material) and measured by weight or volume of material per unit of volume of the medium.

Control Area – A portion of the interconnected electricity system grid whose operations and procedures are controlled and managed by a single utility. This utility typically owns most of the facilities in its control area and is responsible for the physical interaction with neighboring control areas.

Corrosivity – Is an estimate of the potential for soil-induced chemical action that dissolves or weakens uncoated shell.

CPCN – Certificate of Public Convenience and Necessity.

CPUC – California Public Utilities Commission.

CRHR – California Register of Historical Resources.

CRIT – Colorado River Indian Tribe.

CRMP – Cultural Resource Management Plan.

CSLC – State Lands Commission; the California agency that manages state-owned lands, such as the zone between mean high tide and the land lying offshore within the three-mile limit.

CSP – Concentrating Solar Power.

Cultural Resource – Places or objects important for scientific, historical, and religious reasons to cultures, communities, and individuals.

CVAG – Coachella Valley Association of Governments.

CVCC – Coachella Valley Conservation Commission.

CVMSHCP – Coachella Valley Multiple Species Habitat Conservation Plan.

CWA – Clean Water Act.

dBA – The A-weighted decibel scale representing the relative insensitivity of the human ear to low-pitched sounds; decibels are logarithmic units that compare the wide range of sound intensives to which the human ear is sensitive.

DC – Direct current.

DCA – Development and Coordination Agreement.

Decibel (Db) – A logarithmic unit which measures the pressure levels of sounds.

DEIR – Draft Environmental Impact Report (see EIR).

DES – Department of Economic Security.

DHS – Department of Health Services.

DOC – California Department of Conservation.

DOI – U.S. Department of the Interior; a federal Department that includes the following agencies: – BLM, USFWS, Bureau of Mines, Bureau of Reclamation, etc.

DOT – U.S. Department of Transportation.

DPM – diesel particulate matter.

DPR – Department of Pesticide Regulation.

DPV2 – Devers–Palo Verde 500 kV Transmission Line No. 2 (the Proposed Project).

DRECP – Desert Renewable Energy Conservation Plan.

DTSC – Department of Toxic Substances Control.

DWMA – Desert Wildlife Management Area.

DWR – California Department of Water Resources.

ECP – Erosion Control Plan.

EDD – (California) Employment Development Department.

EIR – Environmental Impact Report; an environmental impact assessment document prepared in accordance with the California Environmental Quality Act (CEQA).

EIR/EIS – Environmental Impact Report and Environmental Impact Statement, prepared as a single document for submission to both the state and federal governments and for public review. See EIR and EIS.

EIS – Environmental Impact Statement; an environmental impact in accordance with the National Environmental Policy Act (NEPA).

EMF – Electric and Magnetic Field.

Emission – Unwanted substances released by human activity into air or water.

EMT – Emergency Medical Training.

EPA – U.S. Environmental Protection Agency; a federal agency that works to protect the environment.

EPRI – Electric Power Research Institute.

ESA – Endangered Species Act.

ESH – Environmentally Sensitive Habitat; an area designated by governmental agencies as requiring special administration or protection.

FAA – Federal Aviation Administration.

Fault – A fracture or zone of fractures in rock strata which have undergone movement that displaces the sides relative to each other, usually in a direction parallel to the fracture. Abrupt movement on faults is a cause of most earthquakes.

FCC – Federal Communication Commission.

FEIR – Final Environmental Impact Report. The Final EIR includes all comments made to the Draft EIR as well as the responses of the Lead Agency to those comments and is submitted to the state government and the public for review of a proposed project.

FEIS – Final Environmental Impact Statement.

FEMA – Federal Emergency Management Agency.

FERC – Federal Energy Regulatory Commission.

FHWA – Federal Highway Administration.

Flora – Plants or plant life.

FLPMA – Federal Land Policy and Management Act.

FRA – Federal Railway Administration.

FS – Facilities Study.

FTE – Full-time equivalent.

Fugitive Dust – Airborne pulverized soil particles.

g – (a) gram; (b) gravities, a unit of acceleration equal to that produced on free falling bodies at the earth's equator.

Generation – The production of electricity from other forms of energy such as combustion, falling water or thermal transfer.

Gen-Tie – Transmission line connecting a generator to the electric grid.

GIS – Geographic Information System.

gpd – Gallons per day; a measure of flow rate.

GPS – Global positioning system.

HC – Hydrocarbons; a mixture of hydrocarbon compounds usually referred to in the vapor state.

Herpetofauna – Biological term for reptiles.

HF – High frequency.

HMA – Housing Market Area; see Socioeconomics.

Horsepower – A unit of power equivalent to 33,000 foot-pounds per minute or 745.7 watts of electricity.

HOV – High-occupancy vehicle.

Hz – Hertz; a measure of frequency in cycles per second.

I-10 – Interstate 10.

I-15 – Interstate 15.

IEEE – Institute of Electrical and Electronic Engineers.

IID – Imperial Irrigation District.

Import Capability – The capacity or extent to which a utility or electric control area can purchase electric power from outside its electric system at a given time or during a given set of conditions using all available facilities.

Imports – The purchase of electricity by a utility from another utility outside its electric system.

Inversion – A layer of air in the atmosphere in which the temperature increases with altitude at a rate greater than normal (adiabatic). Pollutants tend to be trapped below the inversion.

Invertebrate – Animals that lack a spinal column.

IOU – Investor Owned Utility.

IRPA – International Radiation Protection Association.

ISO – Independent System Operator.

kcmil – Thousand circular mils; refers to conductor size.

km² – Square kilometer.

KOP – Key Observation Point; one or a series of points on a travel route or at a use area where the view of the proposed project would be most revealing.

kV – Kilovolt. A measure of electric voltage, one thousand volts.

kV/cm – Kilovolts per centimeter.

kV/m – Kilovolts per meter.

KVPs – Key viewpoints.

kWh – Kilowatt-hour.

L10 – An average of noise levels that are exceeded 10 percent of the time during the measurement period.

Lateral Erosion – Horizontal movement of a channel bank, or channel widening, caused by water transport of bank material.

lbs/day – Pounds per day.

Ldn – The average ambient noise level in dBA with levels between 10 p.m. and 7 a.m. increased by 10 dBA.

Lead Agency – The agency responsible for preparation of the CEQA or NEPA document. For the proposed DPV2 Transmission Line Project, the CPUC is the Lead Agency under CEQA and the BLM is the Lead Agency under NEPA.

Leq – Average level of sound determined over a specific period of time.

Liquefaction – The process of making or becoming liquid (soils).

Load Centers – Major areas of electricity consumption such as large cities or large industrial facilities.

Local Scour – Lowering of a channel bed as a result of a local disturbance to flow, such as bridge piers, a sudden drop or a sharp channel bend.

LOS – Level of Service; a measure of roadway congestion, ranging from A (free-flowing) to F (highly congested).

Low Flow – Low rate of water flow due to scant rainfall and low runoff.

LTPP – Long Term Procurement Plan.

LUST – Leaking underground storage tank.

m – Meter, length equal to 39.37 inches.

Median – The mid-value in a series of values, with half having greater value and half lower value. To be distinguished from "average."

mG – Milligauss. A measure of magnetic field strength.

Milligauss (mG) – Measurement of magnetic field strength.

Mixing Height – The distance from the ground to a daytime (temperature) inversion layer.

MMI – Modified Mercalli Intensity (scale); subjective numerical index describing the severity of an earthquake in terms of its observed effects on humans, man-made structures, and the earth's surface.

Monitoring Station – A mobile or fixed site equipped to measure instantaneous or average ambient air pollutant concentrations.

MP – Milepost.

MPA – Municipal Planning Area.

Multipathway Pollutants – Pollutants that pose a risk to public health through individual inhalation, ingestion (from food, water, or soil) or dermal absorption.

MVA – Megavolt-amperes, is defined as the apparent power of the line. MVA is composed of both real power (measured in megawatts or MW) and reactive power (measured in megavoltamperes reactive or MVAR). The cable circuit rating (expressed in MVA) is the apparent power rating.

MVAR – Megavolt-amperes reactive.

MW – Megawatt; a measure of electric power equal to 1,000 kilowatts or 1,000,000 watts.

Mw – Moment magnitude; measurement by which earthquakes are measured.

MWD – Metropolitan Water District.

NAAQS – National Ambient Air Quality Standards; see AAQS.

NAHC – Native American Heritage Commission.

NEPA – National Environmental Policy Act.

NERC – North American Electricity Reliability Council.

NESC – National Electrical Safety Code.

NHPA – National Historic Preservation Act.

Nitrogen Oxides – A gaseous mixture of nitric oxide (NO) and nitrogen dioxide (NO_2) and symbolically represented as NO_3).

NO – Nitric oxide. A molecule of one nitrogen and one oxygen atom. Results usually from combustion of organic substances containing nitrogen and from recombination of nitrogen decomposed in air during high temperature combustion.

NO_2 – Nitrogen dioxide. A molecule of one nitrogen and two oxygen atoms. Results usually from further oxidation of nitric oxide (NO) in the atmosphere. Ozone accelerates the conversion.

NOI – Notice of Intent.

Noise Level, Median – The level of noise exceeded 50 percent of the time. Usually specified as either the daytime or the nighttime median noise level. Also given the designation L_{50}.

Non-Utility Owned Generation – Generation which is possessed by an entity not in the business for the sale of electricity at retail.

NOP – Notice of Preparation.

NOx – Oxides of nitrogen. Poisonous and highly reactive gases produced when fuel is burned at high temperatures, causing nitrogen in the air to combine with oxygen.

NPDES – National Pollutant Discharge Elimination System.

NPS – National Park Service (an agency of the U.S. Department of the Interior).

NRC – United States Nuclear Regulatory Commission.

NRHP – National Register of Historic Places.

NSR – New Source Review; see Air Quality.

O_3 – See Ozone.

OES – Office of Emergency Services.

OHV – Off-highway vehicle.

OPGW – Optical ground wire.

OPH – Office of Historic Preservation.

ORA – (CPUC's) Office of Ratepayer Advocates.

ORV – Off-road vehicle.

OSHA – U.S. Occupational Safety and Health Administration, a federal agency regulating health and safety in the workplace.

Oxidant – A mixture of chemically oxidizing compounds formed from ultraviolet stimulated reactions in the atmosphere, with ozone a principal fraction.

Ozone – A molecule of three oxygen atoms — O_3. A colorless gas formed by a complex series of chemical and photochemical reaction of reactive organic gases, principally hydrocarbons, with the oxides of nitrogen, which is harmful to the public health, the biota, and some materials.

PA – Programmatic Agreement.

Particulate Matter (particulates) – Very fine sized solid matter or droplets, typically averaging one micron or smaller in diameter. Also called "aerosol."

PCBs – Polychlorinated biphenyls.

PEA – Proponent's Environmental Assessment; required by CPUC when filing application for CPCN.

pH – A measure of acidity or alkalinity.

Photochemical Pollutant – Reactive organic compounds (ROC) and nitrogen oxides (NOx), photochemical pollutants that absorb energy from the sun and react chemically to form ozone (O_3).

Phytoplankton – Microscopic plants that form the base of the marine/aquatic food chain.

Planning Reserves – As required by WSCC Operating Criteria, WSCC member utilities must have standby generation capacity, in addition to existing demand requirements, to insure an adequate level of service.

PM10 – Particulate matter less than 10 microns in size, which is small enough to be inhaled deeply into the lungs and cause disease.

PPA – Power Purchase Agreement.

ppb – Parts per billion, a measure of the amount of one substance found in a second, which is the carrier.

ppm – Parts per million, a measure of the amount of one substance found in a second, which is the carrier.

ppt – Parts per thousand, a measure of the amount of one substance found in a second, which is the carrier.

PSD – Prevention of Significant Deterioration; a federal set of limits on emissions of sulfur oxide and particulates to protect air quality in non-urban area.

psi – Pounds per square inch.

Psig – The gauge value of pressure in pounds per square inch.

PTO – Permit to Operate; granted by the APCD after source testing and validation of permits.

RAS – Remedial Action Scheme.

Rating – Maximum operation limit of transmission or generation facilities, as established by WSCC and/or NPP operating and reliability criteria guidelines. Utility facilities and interconnections can be rated either for individual or simultaneous operation, where simultaneous operations take into consideration collective WSCC or NPP utilities.

Riparian – Area along the banks of a river or lake supporting specialized plant and animal species.

Riprap – A foundation constructed of broken stones or boulders loosely placed or thrown together, as in deepwater, on a soft bottom, or as a seawall to protect against erosion.

RMP – Resource Management Plan.

RMR – Reliability Must Run.

RNA – Research Natural Area.

ROD – Record of Decision.

ROG – Reactive organic gases.

ROW – Right-of-way; an easement, lease, permit, or license across an area or strip of land to allow access or to allow a utility to pass through public or private lands.

ROWs – Rights-of-way.

RTU – Remote Terminal Unit; a device that takes data from field transmitters that detect pressure, temperature, and other parameters.

Ruderal – Growing where the natural vegetation cover has been disturbed.

RWQCB – Regional Water Quality Control Board.

SBC – San Bernardino County.

SCAB – South Coast Air Basin.

SCADA – Substation Control and Data Acquisition.

SCAG – Southern California Association of Governments.

SCAQMD – South Coast Air Quality Management District.

SCE – Southern California Edison Company.

SCS – Soil Conservation Service.

SDG&E – San Diego Gas & Electric Company.

SEA – Significant Ecological Area; an area containing an ecosystem of value and requiring government protection.

Sensitive Receptor – Land uses adjacent to or within proximity to the Proposed Project that could be impacted by construction, operation, and maintenance activities.

SHPO – State Historic Preservation Office.

Shrink-Swell Potential – The expansion or contraction of primarily clay-rich soils during alternating wetting and drying cycles.

SIP – State Implementation Plan (see Air Quality); a document required periodically from each county by EPA that indicates the progress and the planning of the county for improving the quality of its air.

SIS – System Impact Study.

Skylining – Extending above the horizon line.

SO_2 – Sulfur dioxide; a corrosive and poisonous gas produced from the complete combustion of sulfur in fuels.

SOx – Oxides of sulfur. The group of compounds formed during combustion or thereafter in the atmosphere of sulfur compounds in the fuel, each having various levels of oxidation, ranging from two oxygen atoms for each sulfur atom to four oxygen atoms.

SPCC – Spill prevention containment and counter measure.

SPS – Special Protection System.

SR – State Route.

SRP – Salt River Project.

STEP – Southwest Transmission Expansion Plan.

Stream Scour – Lowering of a stream bed during the passage of a single stream flow. Stream scour can be local in nature (see Local Scour) or more wide-spread (see General Scour).

Substrate – Geologic term describing soil or geologic layers underlying the ground surface.

Sulfates – Compounds in air or water that contain four oxygen atoms for each sulfur atom. See SOx.

Sulfur Oxides – A gaseous mixture of sulfur dioxide (SO_2) and sulfur trioxide (SO_3) and symbolically represented as SOx. Can include particulate species such as sulfate compounds ($-SO_4$).

SVC – Static VAR Compensation.

SWPPP – Storm Water Pollution Prevention Plan.

TAC – Toxic Air Contaminants.

TC – Transportation Corridor.

TCM – Transportation Control Measures.

TCP – traditional culture property.

TCP – Traffic Control Plan.

TDS – Total Dissolved Solids.

TEAM – Transmission Economic Assessment Methodology.

Terrestrial – Related to or living on land. Terrestrial biology deals with upland areas as opposed to shorelines or coastal habitats.

TO – Transmission Owner.

tpd – Tons per day.

TSP – Total Suspended Particulates; solid or liquid particles small enough to remain suspended in air. PM10 is the portion of TSP that can be inhaled.

Turbidity – Cloudiness or muddiness of water, resulting from suspended or stirred up particles.

UBC – Uniform Building Code.

ug/m^3 – Millionths of a gram per cubic meter, a unit of concentration in liquids or gases.

USA – Underground Service Alert.

USACE – U.S. Army Corps of Engineers.

USDA – U.S. Department of Agriculture.

USFS – U.S. Forest Service.

USFWS – U.S. Fish and Wildlife Service.

USGS – U.S. Geological Survey.

Utility Corridor – A strip of land, or an easement, on which utility facilities such as power lines and pipelines are constructed.

V/C – Volume to Capacity ratio; a measure of the capacity of a roadway. When V/C is 100 percent, no more traffic can be accommodated.

VAC – Visual absorption capacity.

VAR – Voltage ampere-reactive.

Viscosity – Term applied to a fluid indicating its resistance to sheer. In common terms, how "sticky" the fluid.

Visual Sensitivity – Consideration of people's uses of various environments and their concerns for maintenance of scenic quality and open-space values; examples of areas of high visual sensitivity would be areas visible from scenic highways, wilderness areas, parks, recreational water bodies, etc.

VOC – Volatile organic compounds.

vpd – Vehicles per day.

VRM – Visual Resource Management.

WA – Wilderness Area.

WATCH – Work Area Traffic Control Handbook.

Watershed – The area contained within a drainage divide above a specified point on a stream.

WECC – Western Electricity Coordinating Council.

Wetland – Lands transitional between obviously upland and aquatic environments. Wetlands are generally highly productive environments with abundant fish, wildlife, aesthetic, and natural resource values. For this reason, coupled with the alarming rate of their destruction, they are considered valuable resources, and several regulations and laws have been implemented to protect them.

WHO – World Health Organization.

WOD – West of Devers.

K. Index

— A —

— B —

— D —

— E —

— F —

— G —

— H —

— N —

— O —

— P —

— R —

— S —