4.9 Hydrology and Water Quality

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the Santa Barbara County Reliability Project (proposed project) with respect to hydrology and water quality. Impacts from geologic hazards are discussed in Section 4.6, "Geology, Soils, and Mineral Resources," impacts on wetlands and aquatic habitats are discussed in Section 4.4, "Biological Resources," and impacts related to water quantity and water use are included in Section 4.13, "Population and Housing."

4.9.1 Environmental Setting

4.9.1.1 Hydrology and Water Quality in the Project Area

For ease of discussion, this section divides the project area into the Northern Project Area, which consists of Segment 3A, portions of Segments 3B and 4, and the Carpinteria Substation, and the Southern Project Area, which consists of Segments1 and 2, portions of Segments 3B and 4, the Santa Clara and Casitas Substations, and the Getty Tap.

Surface Water

Surface waters associated with the Northern Project Area are included in the Central Coast Hydrological Region (DWR 2009a) or Hydrologic Unit Code 1806 (USGS 2013). In the Northern Project Area, coastal streams flow south from the southern foothills of the Santa Ynez Mountains towards the Pacific Ocean. Surface drainage occurs via Carpinteria, Franklin, Gobernador, Rincon, and Santa Monica Creeks. Average precipitation in the Carpinteria Groundwater Basin ranges from 15 to 19 inches per year (DWR 2004a).

Surface waters associated with the Southern Project Area are included in the South Coast Hydrological Region (DWR 2009b) or Hydrologic Unit Code 1806 (USGS 2013). In the Southern Project Area, coastal streams flow south and southwest from the southern foothills of the Santa Ynez Mountains towards the Pacific Ocean, except near Lake Casitas, where surface water flows north from the Southern Project Area into the lake. Surface drainage occurs via the Ventura and Santa Clara Rivers and their tributaries. Average precipitation in these basins ranges from 12 to 16 inches per year (DWR 2004b, 2004c).

Agriculture, urban runoff/storm sewers, groundwater loadings, and land development affect surface water quality in the project area as a whole. In addition, natural sources such as highly mineralized bedrock can affect surface water quality. Table 4.9-1 list the surface water bodies in the project area and any analytes that do not meet water quality standards.

Groundwater

The following groundwater summary is based on *California's Groundwater*, Bulletin 118 (DWR 2004a, 2004b, 2004c). Sections referencing specific groundwater basins in the report have been updated since the 2004 publication; the latest version of groundwater basin description is used and referenced here.

Table 4.9-1 Summary of Water Quality Impairments in the Study Area Watersheds

Watershed	Waterbody Name	303d List Pollutants(s)
Central Coast Hydrologic Region	Carpinteria Creek	Chlorpyrifos, Escherichia coli (E. coli), Fecal Coliform, Low Dissolved Oxygen, Sodium
	Carpinteria Marsh (El Estero Marsh)	Nutrients, Organic Enrichment/Low Dissolved Oxygen, Priority Organics
	Franklin Creek	Chlorpyrifos, Escherichia coli (E. coli), Fecal Coliform, Nitrate, pH, Sodium
	Gobernador Creek	Data Not Available
	Rincon Creek	Boron, Chloride, Escherichia coli (E. coli), Fecal Coliform, Sodium, Turbidity
	Santa Monica Creek	Fecal Coliform, pH
South Coast Hydrologic Region	Ventura River Estuary	Trash
	Ventura River (estuary to Weldon Canyon)	Algae
	Ventura River (Weldon Canyon to Coyote Creek)	Indicator Bacteria, Pumping, Water diversion
	Ventura River (Coyote Creek to Camino Cielo Road)	Pumping, Water Diversion
	Canada Larga Creek (Tributary to the Ventura River)	Low Dissolved Oxygen, Total Dissolved Solids
	San Antonio Creek (Tributary to the Ventura River)	Indicator Bacteria, Total Dissolved Solids
	Matilija Creek, North Fork (Tributary to the Ventura River)	None Listed
	Matilja Reservoir	Fish Barriers
	Matilija Creek (Tributary to the Ventura River)	Fish Barriers
	Santa Clara River Estuary	ChemA, Coliform Bacteria, Nitrogen Nitrate, Toxaphene, Toxicity
	Santa Clara River (Estuary to Hwy 101 Bridge)	Toxicity
	Santa Clara River (Freeman Diversion to A Street)	Ammonia, Chloride, Total Dissolved Solids, Toxicity
	Lake Casitas Reservoir Coastal Beaches	Mercury Indicator Bacteria

Source: SWRCB 2013

Northern Project Area

Groundwater associated with the northern project area is within the Carpinteria Groundwater Basin (Groundwater Basin Number 3-18), which is part of the Central Coast Hydrologic Region. The basin is bounded to the north by the Santa Ynez Mountains, to the south and southwest by the Pacific Ocean, and the west by Toro Canyon.

Holocene and Pleistocene age alluvium is present within the basin. Holocene alluvium, which underlies and forms the main agricultural plains in the basin, consists mainly of fine-grained clay and silt and some sand, with local bodies of gravel at the base. The lower part of this alluvium

contains thick beds of clay that confine groundwater in the underlying formation. Within the northern project area, Pleistocene alluvium is present in the lower part of Toro Canyon. This alluvium can be up to 250 feet thick and thins as it approaches the mountains. Pleistocene alluvium in the basin consists of clay, sand, and gravel in lenticular beds. The primary water yielding materials are the discontinuous lenses of sands and gravels and are not widespread. Well yields are generally moderate.

In the Carpinteria Groundwater Basin, groundwater is found in the alluvium, and the Carpinteria, Casitas, and Santa Barbara Formations. Average specific yield for these water-bearing formations is estimated to be 10 percent. The Carpinteria Formation has a thickness up to 75 feet and consists of Pleistocene age unconsolidated to poorly consolidated sands with variable amounts of gravels and cobbles. The Casitas Formation has a thickness of 1,000 to 3,000 feet and consists of Pleistocene age poorly to moderately consolidated clays, silts, sands, and gravels. In the Casitas Formation, groundwater is confined and well yields are generally moderate. The Casitas Formation is the chief water-bearing unit in the Carpinteria Groundwater Basin. The Santa Barbara Formation has a thickness of up to 2,000 feet and consists of Pleistocene age poorly to moderately consolidated marine sands, silts, and clays. Groundwater is also confined within the Santa Barbara Formation.

Groundwater in the Carpinteria Groundwater Basin can be characterized as primarily calcium bicarbonate, with variable amounts of sodium. Groundwater quality is reported as generally stable, with no trends toward impairment. However, historical data have shown elevated levels of nitrates.

Estimates of the total storage capacity of the Carpinteria Groundwater Basin range from 140,000 acre-feet (DWR 1975) to 700,000 acre-feet (CVWD 1996). Total usable groundwater in storage has been estimated to be approximately 19,000 acre-feet, while total groundwater volume in storage calculated from sea level is 700,000 acre-feet.

Southern Project Area

Groundwater associated with the southern project area is within the Ventura River Valley Groundwater Basin (Groundwater Basin 4-3) and the Santa Clara River Valley Groundwater Basin (Groundwater Basin 4-4), which are part of the South Coast Hydrologic Region.

The Ventura River Valley Groundwater Basin is divided into two subbasins, the Upper Ventura Subbasin (Groundwater Basin 4-3.01) and the Lower Ventura Subbasin (Groundwater Basin 4-3.02). Groundwater within the Upper Ventura Subbasin is primarily found within Holocene and Pleistocene age alluvium and is unconfined. The average specific yield is estimated to be 8 percent. The alluvium ranges in thickness from 60 to 100 feet. Groundwater quality indicates that some parts of the basin have elevated levels of total dissolved solids. Total storage capacity of the Upper Ventura Subbasin has been estimated to be from 10,000 to 35,118 acre-feet. Groundwater in storage is estimated to be 31,600 acre-feet.

Groundwater within the Lower Ventura River Subbasin is found within the alluvium and the San Pedro formation, and is unconfined. The average specific yield is estimated to be 8 percent. The alluvium consists of Holocene and Pleistocene age sands, gravels, and clays, ranging in thickness from 60 to 100 feet. The San Pedro Formation consists of gravels, sands, silts, and clays. Groundwater in the Lower Ventura River Subbasin can be characterized as sodium bicarbonate. Some parts of the basin have elevated levels of hydrogen sulfide gas. High sulfates and nitrates are common in the shallow alluvium along drainage courses where most water wells are found. In

addition, oil has been found in groundwater. Total storage capacity of the Lower Ventura Subbasin has been estimated to be 264,000 acre-feet. Total groundwater in storage has not been estimated.

The Santa Clara River Valley Groundwater Basin is divided into two subbasins, the Oxnard Subbasin (Groundwater Basin 4.4-02) and the Mound Subbasin (Groundwater Basin 4-4.03). The Oxnard Subbasin is bounded to the west by the Pacific Ocean. Groundwater within the Oxnard Subbasin is within five recognized aquifers, which extend offshore and may outcrop on the ocean floor. The Oxnard Aquifer and the Fox Canyon Aquifer are the two primary freshwater-bearing units. The average specific yield for these aquifers is estimated to be 16 percent. The Oxnard Aquifer consists of Holocene and Pleistocene age sands and gravels deposited within the Oxnard alluvial plain. The Fox Canyon Aquifer consists of gravels at the base of the San Pedro Formation that range from 100 to 300 feet in thickness. Groundwater in some parts of the basin has elevated levels of nitrates, dichlorodiphenyltrichloroethane (DDT) and polychlorinated biphenyls (PCBs). In addition, seawater intrusion has occurred in the subbasin. Total onshore capacity of the Oxnard Subbasin has been estimated to be 7,140,000 acre-feet. Groundwater in storage was estimated to be 5,380,000 acre-feet in 1999.

Groundwater within the Mound Subbasin is primarily in the alluvium (unconfined) and the San Pedro Formation (confined in the west). The average specific yield is estimated to be 8 percent. The alluvium consists of Holocene and Pleistocene age silts and clays with lenses of sands and gravels. The alluvium has a thickness up to 500 feet. The San Pedro Formation consists of fine sands and gravels. The San Pedro Formation has a depth up to 4,000 feet below ground surface. A wide range of concentrations of total dissolved solids is found in groundwater in the basin, from 90 to 2,088 milligrams per liter. Other water quality impairments are unknown. Total storage capacity of the Mound Subbasin has been estimated to be 153,000 acre-feet. Groundwater storage is estimated to be 110,000 acre-feet.

Wetlands

No wetlands were detected within the project footprint during a preliminary wetland delineation that was performed on May 14 and 15, 2013 (BioResource Consultants 2013). Wetlands and other waters are discussed in Section 4.4, “Biological Resources,” of this report.

Flood Zones

Areas of Ventura and Santa Barbara Counties are highly susceptible to flooding and flood damage due to numerous small tributaries draining steep watersheds in the coastal mountains. During periods of intense rain, runoff water can potentially exceed the storage capacity of the drainage systems, causing flooding. Ventura County has implemented mitigation measures to reduce the effects of flooding. In upland areas, where streams and steep topography can cause rapid flooding, dams or basins are used to dissipate flow and trap debris, reducing the effects on areas downstream. The Ventura River Project was approved in 1956 and was designed to capture seasonal floodwaters that would otherwise go to the ocean. This project included the construction of the Casitas Dam, Lake Casitas Reservoir, Robles Diversion Dam, Robles-Casitas Canal, and their conveyance systems. Lake Casitas Reservoir has a storage capacity of 254,000 acre-feet. The Matilda Reservoir Dam (3800 acre-feet), Stewart Canyon Dam (203.5 acre-feet), and the Senior Canyon Dam (78 acre-feet) are also present in the Ventura River watershed (U.S. Bureau of Reclamation 2013).

In addition, the coastlines of Ventura and Santa Barbara Counties are susceptible to tidal flooding, storm surge, and wave action in the narrow areas immediately adjacent to the tidal zone.

Tsunamis, which are sea waves caused by earthquakes or undersea landslides, are also a source of coastal flooding in Ventura and Santa Barbara Counties.

Floodplain mapping indicates that the Carpinteria Substation is located immediately adjacent to the floodplain associated with Franklin Creek (Figure 4.9-1). The northwest corner of the substation may be subject to flooding when Franklin Creek exceeds its capacity. The Casitas Substation is located adjacent to the floodplain of the Ventura River (Figure 4.9-1). The Casitas Substation is not subject to flooding because it is located approximately 20 feet in elevation above the floodplain.

Water Supply and Usage for the Proposed Project

During project construction, 393 acre-feet of water would be used for dust control and other purposes. All water would be obtained from providers who use both surface water and groundwater. During operations, water would be used for landscaping and sanitary purposes at the three substations (Carpinteria Substation, Casitas Substation, and Santa Clara Substation). These water use activities are currently occurring at the substations and would represent a continuation of existing operations and maintenance procedures; therefore, no change in water use is anticipated. For impacts related to water supply and water usage see Section 4.13, "Public Services and Utilities."

4.9.2 Regulatory Setting

This subsection summarizes federal, state, and local laws, regulations, and standards that govern hydrology and water quality in the project area.

4.9.2.1 Federal

The Clean Water Act of 1972, as amended in 2002

The Clean Water Act (CWA) regulates water quality in the United States. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. These waters include all navigable waters, tributaries, and adjacent wetlands. Wetlands, drainages, creeks, and streams are generally subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under Section 404 of the CWA. By USACE definition, all aquatic or riverine habitats between the "ordinary high water mark" of rivers, creeks, and streams are potentially considered "waters of the United States" and may fall under USACE jurisdiction. Any deposit of fill into waters of the United States, including wetlands, requires the acquisition of a permit from the USACE pursuant to Section 404 of the CWA.

Section 401 of the CWA requires that every applicant for a federal permit or license for any activity that may result in discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with state water quality standards. In California, 401 Certification is granted by the Regional Water Quality Control Board (RWQCB) for projects that are located in a single region, or by the State Water Quality Control Board (SWRCB) for multi-regional projects. Portions of the project would be located within the Regional Water Quality Control Board's Central Region (Region 3) and within the Los Angeles Region (Region 4). Therefore, the SWRCB would be responsible for issuance of a 401 Water Quality Certification. Conditions placed on the issuance of a Section 401 certification by the SWRCB become part of the Section 404 permit issued by the USACE, and a Section 404 permit cannot be issued if Section 401 certification is denied.

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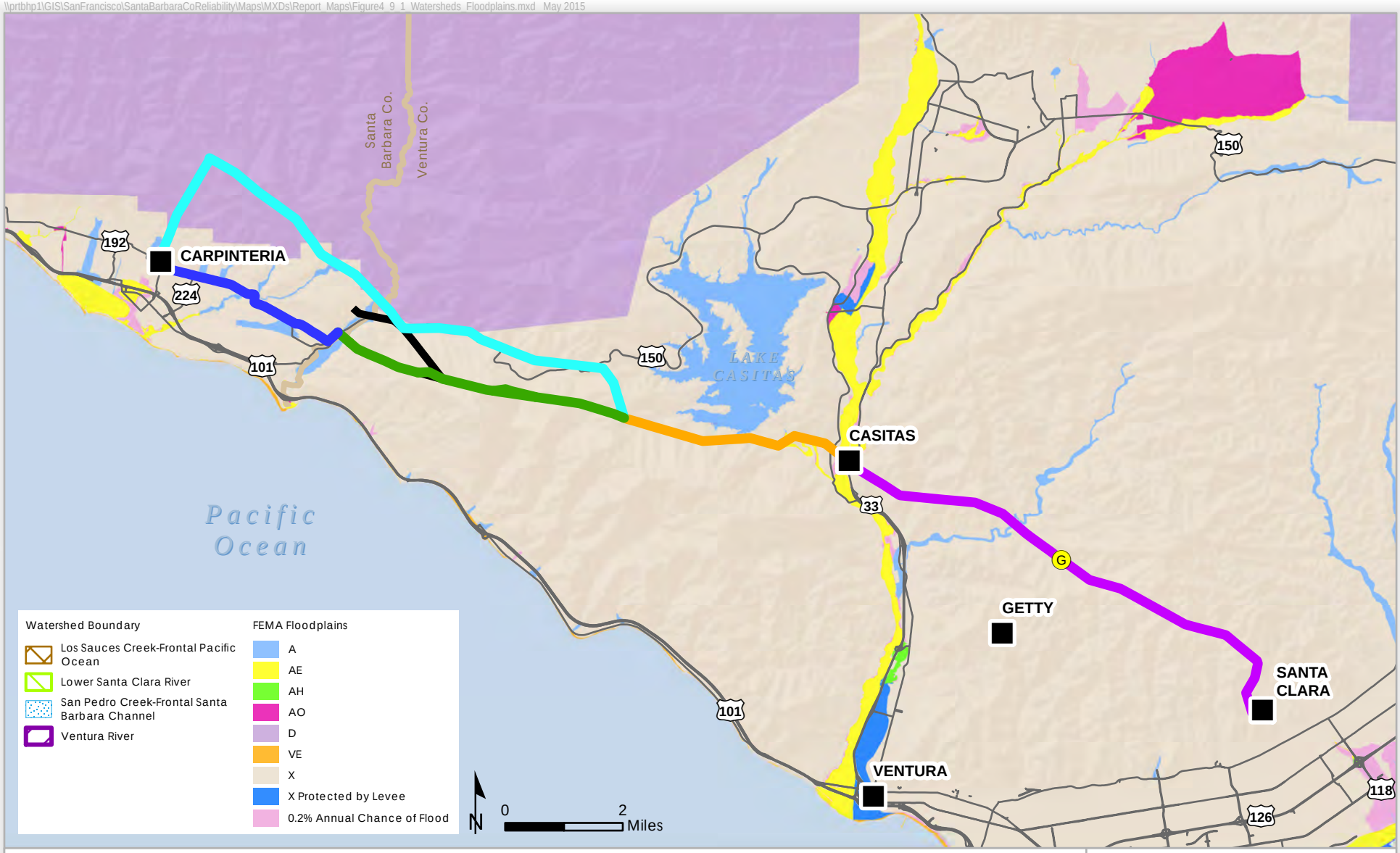

Existing Electrical Subtransmission Lines
- Segment 1
- Segment 2
- Segment 3A
- Segment 3B
- Segment 4
- Existing SubTrans 66-kV To Be Removed

Existing Substation Locations

G Getty Tap

Major Roads

County Boundary

Figure 4.9-1 Watersheds and Floodplains in the Vicinity of the Proposed Project

Santa Barbara County Reliability Project
Santa Barbara and Ventura Counties California

Section 303(d) of the CWA (CWA, 33 U.S. Code 1250 et seq., at 1313(d)) requires states to identify "impaired" water bodies as those that do not meet water quality standards. States are required to compile this information and submit it as a list to the U.S. Environmental Protection Agency (EPA) for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of total maximum daily load (TMDL) requirements. The SWRCB and RWQCBs are engaged in ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

As authorized by Section 402 of the CWA, the SWRCB administers the statewide National Pollution Discharge Elimination System (NPDES) Construction Storm Water General Permit (NPDES Permit, 2009-0009-DWQ as amended by 2010-0014-DWQ), which covers a variety of construction activities that could result in wastewater discharges. Under this system, the State issues project-level Construction General Permits for projects that disturb more than 1 acre of land. The SWRCB Construction General Permit process involves the notification of the construction activity by providing a Notice of Intent to the SWRCB, the development of a Storm Water Pollution Prevention Plan (SWPPP), and the implementation of water quality monitoring activities as required. The purpose of a SWPPP is to:

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

Safe Drinking Water Act

The Safe Drinking Water Act (42 U.S.C. §300[f] et seq. [1974]) was passed in 1974 (and amended in 1986 and 1996) to protect public health by regulating the nation's public drinking water supply. This law requires many actions to protect drinking water and its sources, which include rivers, lakes, reservoirs, springs, and groundwater wells. It authorizes the U.S. Environmental Protection Agency (EPA) to set national health-based standards for drinking water to protect against both naturally occurring and human-caused contaminants that may be found in drinking water. It also mandates the development of a Groundwater/Wellhead Protection Program by each state in order to protect groundwater resources that serve as a public drinking water source.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA), an agency within the Department of Homeland Security, administers the National Flood Insurance Program (NFIP). The NFIP is a federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. Participation in the NFIP is based on an agreement between local communities and the federal government, which states that if a community adopts and enforces a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas, the federal government will make flood insurance available within the community as a financial protection against flood losses.

In support of the NFIP, FEMA identifies flood hazard areas throughout the United States and its territories by producing Flood Hazard Boundary Maps, Flood Insurance Rate Maps, and Flood Boundary and Floodway Maps. Several areas of flood hazards are commonly identified on these maps. One of these areas is a Special Flood Hazard Area; this term designates any area with a 1 percent chance of being inundated by a flood in any given year (also referred to as the base flood).

4.9.2.2 State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) General Order 131-D describes that the CPUC has jurisdiction over the siting and design of public utilities in California. However, the CPUC is required to consult with local agencies requiring land use matters.

Porter–Cologne Water Quality Control Act (Porter–Cologne Act)

The Porter–Cologne Act (California Water Code, Division 7), passed in 1969, regulates surface water and groundwater quality in the state and also assigns to the SWRCB responsibility for implementing CWA Sections 401 (Water Quality Certification), 402 (NPDES), 303(d) (List of Impaired Water Bodies), and 305(b) (Report on the Quality of Waters in California), and the SWRCB has delegated the authority to the nine RWQCBs. The SWRCB and RWQCBs are responsible for issuing permits for certain point source discharges and for regulating construction and storm water runoff.

The RWQCBs regulate discharges to waters within their respective jurisdictions through administration of NPDES permits, waste discharge requirements, and CWA Section 401 water quality certifications. RWQCBs administer Section 401 water quality certifications to ensure that projects with federal 404 permits do not violate State water quality standards. The SWRCB has jurisdiction over depositing fill or dredging in "State Only Waters" and issues Waste Discharge Requirements for these projects. Construction projects may require RWQCB approval of a 401 Water Quality Certification, as well as Waste Discharge Requirements and/or a Low Threat Discharge Permit covering construction activities related to discharges from hydrostatic pipeline testing and construction dewatering.

The SWRCB and RWQCBs are responsible for developing and implementing regional basin plans to regulate all pollutants or nuisance discharges that may affect either surface water or groundwater. Basin plans are prepared by the RWQCBs to establish water quality standards for both surface and groundwater bodies within their respective jurisdictions. Basin plans designate beneficial uses for surface and groundwater, set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses, and describe implementation programs to

protect all waters in the region. Under Section 303(d) of the CWA, the RWQCB develops a list of impaired water bodies in which water quality is impeding the attainment of beneficial uses.

Central Coast Basin Plan

The majority of the proposed project would be located in the mountainous Central Coast, within Regional Water Quality Control Board's Central Coast Region (Region 3), which is particularly susceptible to erosion. Therefore, the Central Coast Basin Plan focuses on controlling water quality degradation for land disturbing activities such as construction and mining (Section VIII.E). The Central Coast Basin Plan assesses the impact of erosion and sedimentation on water quality and beneficial uses in non-designated planning areas of the Central Coast, including Santa Barbara County, and contains erosion and sedimentation control policies. It identifies examples of accelerated erosion, including from construction, and the adverse effects of soil loss and sedimentation on streams and reservoirs, water supplies, groundwater recharge, fish and wildlife habitat, recreation, transport of pathogens and toxic substances, and increased flooding. The Central Coast Basin Plan also includes procedures to identify critical watersheds, assess soil-disturbing activities, and identify BMPs.

Los Angeles Region Basin Plan

The southern portion of the proposed project would be located within the Regional Water Quality Control Board's Los Angeles Region (Region 4). This portion of the project is located within the Los Angeles Basin, which shares a border with the Central Coast Basin at Rincon Point. The Ventura River Basin is a 300-square-mile drainage basin and is one of six major hydrologic units in the Los Angeles Basin. The project facilities within the Los Angeles Basin would be located in open space areas near the basin's northern border. The Los Angeles Basin Plan establishes water quality objectives and strategies to maintain water quality and beneficial uses, including storm water permitting and other nonpoint source controls, Section 401 certification, and TMDLs. The Los Angeles Basin has adopted TMDLs for the Ventura River Estuary for trash and for coastal and harbor beaches in Ventura County (LARWQCB 2013).

California Fish and Game Code Section 1602

The California Department of Fish and Wildlife (CDFW) regulates streambed alteration to conserve, protect, and manage California's fish, wildlife, and native plant resources. Section 1602 of the California Fish and Game Code requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that would substantially divert, obstruct, or change the natural flow of the bed, channel, or bank (including associated riparian vegetation) of a river, stream, or lake and/or use material from, or deposit material into, a streambed prior to commencement of the activity. Streams covered under this code include, but are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams, and watercourses with subsurface flow. If the CDFW determines that an action could have an adverse effect on existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is required.

California Coastal Act

The California Coastal Act of 1976 established the California Coastal Commission. The Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. In general, and subject to certain exemptions, a Coastal Development Permit must be obtained from either the Commission or the local government prior to construction in the Coastal Zone. Construction for the proposed project would occur in the Santa Barbara County Coastal Zone.

4.9.2.3 Regional and Local

Santa Barbara County Floodplain Management Ordinance

Santa Barbara County's flood hazard areas are subject to periodic inundation. The County's Floodplain Management Ordinance (Ordinance No. 3898) has been adopted to protect human life and health and to minimize expenditures of public money for flood control projects, the need for rescue and relief efforts associated with flooding, prolonged business interruptions, and damage to public facilities and utilities. It has also been adopted to help maintain a stable tax base, ensure that potential buyers are notified that property is in an area of special flood hazard, and ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. Protection methods include restricting uses, requiring flood damage protection, controlling alteration of floodplains, installing stream channels and protective barriers, controlling placement of fill, and preventing floodwater diversion (Santa Barbara County 2012). The Santa Barbara County Flood Control and Water Conservation District implements this ordinance.

Santa Barbara County Grading Ordinance

The Santa Barbara County grading ordinance (County Code Chapter 14) contains standards and requirements for grading. All developers performing grading must conform to the recommendations of a soils engineer and engineering geologist, prepare and comply with an erosion and sediment control plan, comply with BMPs, employ dust control measures, use approved haul routes, prevent deposition of soil on county roads, provide drainage, protect remaining trees, and follow prescribed procedures for clearing and filling the site.

Ventura County Flood Control Ordinance

The Ventura County Watershed Protection District is responsible for the protection of life, property, waterways, watersheds, and public highways from damage or destruction caused by flooding or storm water. The District regulates channels with peak runoff flows of more than 500 cubic feet per second during a 100-year storm. The District requires a watercourse permit for any work or project affecting the bed, banks, and overflow areas of District jurisdictional red-line channels (Figure 4.9-2). ~~encroachment into regulated channels or their rights of way (ROWs).~~ The District also implements the Ventura County Flood Plain Management Ordinance (Ventura County Ordinance No. 3841, as amended), which requires permit review of structures built in the floodplain. The ordinance requires construction of utilities, such as electrical, sewer, water, and gas systems in a manner designed to minimize flood damage.

Ventura County Grading Ordinance

The Ventura County grading ordinance is found in Appendix J to the Ventura County Building Code (Ordinance No. 4369). The provisions of this appendix set forth the rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments, and grading site runoff, including erosion sediments and construction-related pollutants. It also establishes the administrative procedure for the issuance of permits related to grading and provides for approval of plans and inspection of grading construction.

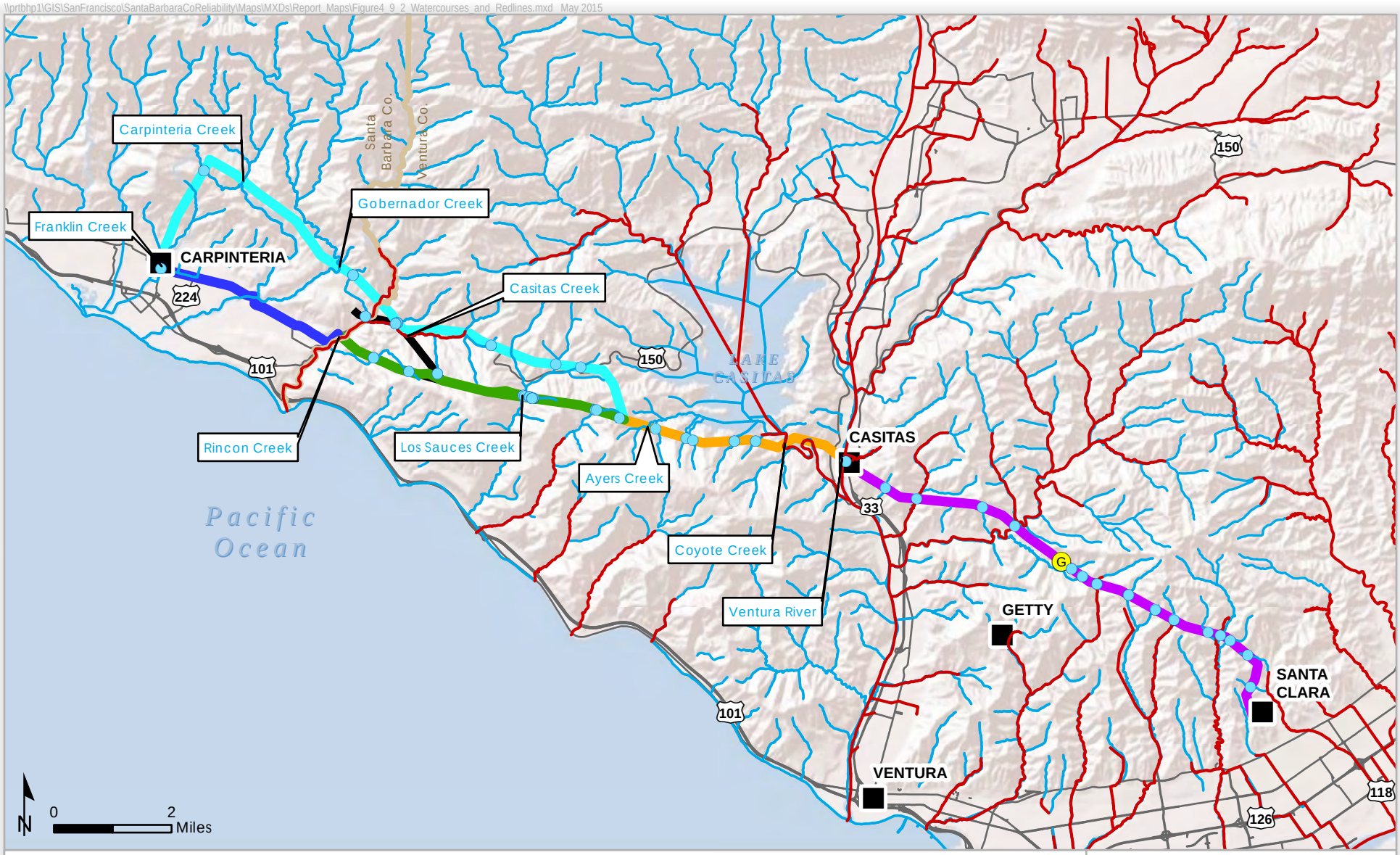

Figure 4.9-2
Watercourses and Red-line Channels in the Vicinity of the Proposed Project

Santa Barbara County Reliability Project
Santa Barbara and Ventura Counties California

City of Carpinteria General Plan and Local Coastal Program

The City of Carpinteria General Plan's Open Space, Recreation, and Conservation Element contains objectives to preserve creekways and water quality and to perform restoration. The General Plan allows creek bank and bed alterations only where no practical alternatives are available and seeks to minimize water quality impacts and changes in runoff patterns. Required controls include storm water BMPs, including setbacks from creek banks (Objective OSC-6) (City of Carpinteria 2003).

City of Carpinteria Grading Ordinance

The City of Carpinteria grading ordinance is contained in the municipal code, Chapter 8.36, Excavation and Grading. The grading application contains standard conditions for grading, including engineering supervision, providing drainage, complying with municipal code, protecting public safety, protecting archaeological resources, protecting City infrastructure, minimizing fugitive dust, limiting import/export of material to off-peak hours, and complying with County Engineering Design Standards.

4.9.3 Impact Analysis

4.9.3.1 Methodology and Significance Criteria

The potential environmental impacts to hydrology and water quality from the project were evaluated using significance criteria based on the checklist items in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. An impact is considered significant if the project would:

a) Violate any water quality standards or waste discharge requirements;

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;

c) Substantially 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 that would result in substantial erosion or siltation on or off site;

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner which would result in flooding on or off site;

e) Create or contribute to runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;

f) Otherwise substantially degrade water quality;

g) Place housing within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or

j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

Significance criteria (g) does not apply to the proposed project because housing is not included as part of the proposed project. Therefore, the proposed project would have no impacts associated with the placement of housing within a 100-year floodplain, and this item is not applied as a criterion in the analysis of environmental impacts presented in the following section.

4.9.3.2 Applicant Proposed Measures

There are no Applicant Proposed Measures (APMs) specific to hydrology and water quality. However, APM BIO-7 and APM GEO-1 (See Table 2.10) would also apply to impacts related to Hydrology, as discussed below.

4.9.3.3 Environmental Impacts

Impact HY-1: Violate water quality standards.
LESS THAN SIGNIFICANT

Construction Impacts

Construction of the proposed project would require ground-disturbing activities such as improvements to existing access roads and development of new spur roads, structure and crane pads, and turnaround areas in steep areas with high erosion potential. Construction in these areas could increase soil erosion rates, potentially resulting in sedimentation of adjacent water bodies, violating water quality standards, and/or impacting beneficial uses. Soil disturbance and vegetation clearing adjacent to water bodies could adversely affect water quality, particularly in Rincon Creek, which is already impaired for turbidity under section 303(d) of the CWA. Construction of the proposed project could result in sedimentation of adjacent water bodies if precipitation events occur during active ground disturbing activities (e.g., grading) or if water used for construction purposes (e.g., water for dust suppression or soil compaction) runs off site.

To minimize soil erosion and potential impacts to water quality, the applicant would comply with applicable state storm water regulations and city and county grading ordinances. Since the proposed project would disturb more than 1 acre of soil, the applicant would be required to apply for coverage under the NPDES Construction General Permit and other NPDES permits, as necessary, to address construction activities such as discharge and construction dewatering. The Construction General Permit requires the development and implementation of a SWPPP, which specifies BMPs to reduce or eliminate pollutants in storm water discharges from the site during construction. The SWPPP requires implementation of site-specific BMPs to limit or eliminate sediment or other pollutant discharges from each construction activity location. APM BIO-7 provides examples of BMPs from the SWPPP that the applicant would use during construction.

Water quality could also be impacted as a result of placing fill material in drainages to facilitate improvement of existing, or construction of new, access and spur roads. However, the applicant would be required to secure permits for any earthwork, culvert installation, or other modification to federally jurisdictional waterways (waters of the U.S.) or state waters. For impacts to waters of the U.S., the proposed project would be required to obtain a Section 404 permit from the USACE and a Section 401 permit from the SWRCB certifying that the proposed activity will comply with state water quality standards. Conditions placed on the issuance of the 401 certification become a

part of the Section 404 permit issued by the USACE, and the Section 404 permit cannot be issued if Section 401 certification is denied.

In addition, the CDFW regulates activities that may substantially modify a river, stream, or lake, and requires notification of any proposed activity that will:

- 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.

The notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel; this includes ephemeral streams, desert washes, and watercourses with subsurface flow. Therefore, any impacts to ephemeral, intermittent, and/or perennial drainages within the project footprint would require a Lake and Streambed Alteration Agreement from the CDFW to comply with California Fish and Game Code Section 1602.

Finally, given that the proposed project would be located in an area with highly unstable soils and bedrock geology, the applicant would incorporate project design features to control erosion. Current project designs include a number of retaining walls, and the applicant would implement APM GEO-1 following the results of the geotechnical investigation. Implementation of APM GEO-1 would include additional erosion control devices, as well as avoidance and minimization measures, in areas with unstable slopes. These measures would reduce the potential for project construction to result in sedimentation of adjacent water bodies and minimize the potential for project construction to result in adverse impacts to water quality.

By complying with the terms and conditions of any necessary permits, and implementing site-specific BMPs, project design features, and APM GEO-1, the proposed project is not anticipated to violate water quality standards. Project construction would result in less than significant impacts to water quality.

Operation Impacts

Project operations would include patrol of the project ROW and inspection of subtransmission lines and structures and telecommunications cable. During operations, access roads, spur roads and crane pad/turnaround areas would require maintenance, which could involve periodic light grading and/or vegetation removal. If necessary, the applicant would acquire any applicable grading permits for maintenance activities, and compliance with the grading permits would ensure that water quality standards are met.

The only expected effluent from the site during operations is storm water. The proposed project would incorporate design features, BMPs, and other related measures or practices during operations. The SWPPP would require post-construction BMPs such as stabilization and revegetation of disturbed areas, and the applicant would be required to maintain erosion and sediment control devices during operations. The applicant would identify and address areas of active slope instability throughout the proposed project during operations. No sanitary wastewater

or dewatering discharges would be generated as part of project maintenance. No dredge and fill activities are anticipated as part of project maintenance.

By complying with the terms and conditions of any necessary permits, the proposed project is not anticipated to violate water quality standards or applicable waste discharge requirements. Project operations are anticipated to have less than significant impacts under this criterion.

Impact HY-2: Substantial depletion of groundwater supplies or substantial interference with groundwater recharge.

LESS THAN SIGNIFICANT

Construction Impacts

During construction, 393 acre-feet of water would be used primarily for dust control and soil compaction. Water would also be required for concrete mixing, but the applicant would use existing concrete supply facilities where feasible. The applicant would obtain all water from providers who use both surface water and groundwater. Because the proposed project would not involve direct extraction of groundwater, and water and concrete providers presumably have rights to the water they sell or use, construction of the proposed project would not substantially deplete groundwater supplies in the area.

Groundwater recharge occurs as surface water or precipitation is absorbed into soil and filters down into a groundwater aquifer (USGS 1999). For the proposed project to interfere with groundwater recharge, it would have to create impervious surfaces over an area with suitable soils for aquifer recharge or redirect surface flows away from areas with suitable soils for aquifer recharge. Construction of the proposed project would not introduce substantial new areas of impervious surfaces. New and improved roads would be created with pervious soils, and all work at the substations would take place within the existing substation footprints. The only new impervious surfaces created as a result of the proposed project would be concrete footings for new tubular steel poles (TSPs) in Segment 3B and Segment 4, and at the Getty Tap, Carpinteria Substation, and Casitas Substation. Each of the TSP foundations would be 5 to 9 feet in diameter. However, these footings would be dispersed along the length of the proposed project and would not impact groundwater recharge in any significant way. Moreover, a number of lattice steel tower foundations would be removed throughout the length of the proposed project, which would reduce the total amount of impervious surface resulting from the proposed project.

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

Operation Impacts

The proposed project would not directly extract groundwater for use during operations. During operations, water would only be used for landscaping and sanitary purposes at the three substations (Carpinteria Substation, Casitas Substation, and Santa Clara Substation). These water use activities are currently occurring at the substations and represent a small volume of water; therefore, no change in water use is anticipated. The proposed project would not substantially deplete groundwater supplies in the area.

New areas of impervious surface would not be introduced during project operations and therefore would have no impact on groundwater recharge.

Project operations would not cause substantial depletion of groundwater supplies or substantial interference with groundwater recharge. Therefore, this impact is less than significant for project operation.

Impact HY-3: Substantial alteration of the existing drainage pattern of the site or area that results in substantial erosion or siltation on- or off-site.

LESS THAN SIGNIFICANT

Construction Impacts

Based on a wetland delineation and preliminary jurisdictional determination conducted for the proposed project, construction would result in impacts to 15 ephemeral drainages (BioResource Consultants 2013, SCE 2012). Of the 15 ephemeral drainages impacted, 12 would be impacted as a result of improving existing access roads, one as a result of the use of staging sites, one as a result of creating a new access road, and one as a result of creating a new spur road, all along Segment 4. As currently designed (based on 60 percent engineering drawings), construction of the proposed project would result in a total of 0.06 acres of impacts to waters of the U.S. and 0.50 acres of impacts to state waters (BioResource Consultants 2013). Prior to commencement of construction, the proposed project would be required to secure permits from the USACE and SWRCB to comply with sections 404 and 401 of the CWA, and the proposed project would be required to secure a Lake and Streambed Alternation Agreement from the CDFW to comply with Section 1602 of the California Fish and Game Code. Each of these permits would include required measures to avoid, minimize, or mitigate erosion and sedimentation of these features.

The proposed project would use existing drainage facilities, upgrade or replace deteriorated drainage facilities during rehabilitation of access roads, and design new spur roads so they do not alter existing drainage patterns. Structure pads and laydown/work areas could result in minor localized changes in runoff. However, the sites would be graded such that water would run toward the direction of natural drainage. The applicant would also be required to implement a SWPPP with erosion and sediment control devices to comply with the NPDES Construction General Permit.

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

Operation Impacts

Project operations would include patrol of the project ROW and inspection of subtransmission lines and structures and telecommunications cable. During operations, access roads, spur roads, and crane pad/turnaround areas would require maintenance, which may involve periodic light grading and/or vegetation removal. If necessary, the applicant would acquire any applicable grading permits for maintenance activities. Compliance with the grading permits would ensure that measures are in place to reduce or eliminate the potential for erosion or siltation on or off site.

The proposed project's operations would not alter drainage patterns, including the course of any stream or river. Storm water runoff would use existing drainage facilities. Where permits are required for maintenance or repair activities in waters of the U.S. or state waters, all activities would be conducted in accordance with applicable federal and/or state permits.

Operation of the proposed project would not alter the existing drainage pattern of a stream, river, site, or area and would not result in substantial erosion or siltation on or off site. Therefore, impacts under this criterion would be less than significant.

Impact HY-4: Substantial alteration of the existing drainage pattern or rate or amount of surface runoff in a manner which would result in flooding.
LESS THAN SIGNIFICANT

Construction Impacts

The proposed project would use existing drainage facilities, upgrade or replace deteriorated drainage facilities during rehabilitation of access roads, and design new spur roads so they do not alter existing drainage patterns. Structure pads and laydown/work areas could result in minor localized changes in runoff. However, the sites would be graded such that water would run toward the direction of natural drainage. Although construction pads would result in minor localized changes in runoff volumes, the proposed project would not result in a substantial increase in the amount of impervious surface. In addition, the proposed project would comply with Ventura and Santa Barbara County flood control ordinance and, if necessary, obtain watercourse permits for ~~encroachment~~ work within the bed, bank, or overflow areas of ~~on~~ any red-line channels ~~ROWs~~ regulated by the Ventura County Watershed Protection District. Based on a wetland delineation and preliminary jurisdictional determination conducted for the proposed project, all drainage-related impacts resulting from the proposed project, as currently designed, would take place along Segment 4 (BioResource Consultants 2013). The only red-line channels along Segment 4 are Rincon Creek and Casitas Creek (Figure 4.9-2), and impacts to these channels are not anticipated during construction of the proposed project.

The proposed project would also incorporate design features to control runoff rates and incorporate SWPPP BMPs to minimize erosion that could cause sedimentation and loss of receiving water capacity. Additionally, compliance with applicable laws and permit conditions would ensure that the applicant would conduct any dredge and fill activities such that receiving water capacity would not be reduced. Therefore, impacts under this criterion resulting from project construction would be less than significant.

Operation Impacts

Project operations would not alter drainage patterns and would not introduce substantial amounts of new impervious surfaces. Storm water runoff would follow existing drainage patterns, and the proposed project would incorporate design features to control runoff rates to minimize any impacts to flooding. The applicant would implement its existing operational storm water management plan and BMPs to reduce the potential for flooding and minimize runoff velocities. Therefore, the proposed project would not substantially alter existing drainage patterns, and any potential impacts associated with surface runoff and flood risk would be less than significant.

Impact HY-5: Create or contribute to runoff water exceeding the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff.

LESS THAN SIGNIFICANT

Construction Impacts

Project construction would generate storm water runoff and runoff from dust control activities. However, the proposed project would not substantially alter the existing drainage patterns of the site. Existing drainage facilities would be used, upgraded, or replaced. New access roads and subtransmission structure pads would be constructed such that the natural drainage direction is maintained, and runoff velocity dissipation devices such as water bars would be employed to control the rate at which runoff enters drainage systems. Construction of the proposed project would not result in a substantial increase in the amount of impervious surfaces, and runoff volumes are anticipated to be roughly the same as current conditions.

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

Operation Impacts

Runoff generated during project operations would be limited to storm water, which would follow existing and upgraded drainage systems that have been designed to accept the anticipated runoff capacity. The proposed project would also be required to implement Spill Pollution Control and Countermeasures (SPCC) plans for the substations that include provisions for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. Implementation of the SPCC plans would support the avoidance or minimization of polluted runoff during operation. Any impacts under this criterion from project operations would be less than significant.

Impact HY-6: Other substantial degradation of water quality.

LESS THAN SIGNIFICANT

Construction Impacts

During construction of the proposed project, potential contaminants could be released, including oil, gasoline, diesel motor fuel, industrial solvents, and other chemicals necessary for project construction. However, as discussed above, the applicant would be required to implement a SWPPP that includes BMPs to reduce or prevent any construction-related pollutants from contaminating runoff and degrading water quality on or off site. In addition to BMPs related to erosion control devices, the SWPPP would also include BMPs to address activities that could indirectly contribute contaminants to surface water runoff from the site. APM BIO-7 provides example BMPs that the applicant would employ.

With implementation of the SWPPP, and compliance with all applicable laws and permits, impacts from project construction under this criterion would be less than significant.

Operation Impacts

Operation of the proposed project is not expected to result in the release of pollutants that could degrade water quality. Implementation of the SWPPP and the SPCC plans would reduce the potential for impacts on water quality associated with operations to less than significant.

Impact HY-7: Project structures would impede or redirect flood flows within a 100-year flood hazard area.
LESS THAN SIGNIFICANT

Construction Impacts

In the immediate vicinity of the Carpinteria Substation, two TSPs would be installed within a 100-year flood hazard area as mapped by FEMA. The foundations of these structures would be designed to withstand flood flows. Given the circular shape of the above ground portion of the foundations and their small diameter (5–9 feet), these structures would not impede or redirect flood flows. A small portion of the northwest corner of the Carpinteria Substation is also located within a 100-year flood hazard area, but this is an existing structure and the area within the flood hazard zone is not of sufficient size to impede or redirect flood flows. No other project components would be located within a 100-year flood hazard area. Therefore, any potential construction impacts under this criterion would be less than significant.

Operation Impacts

In the immediate vicinity of the Carpinteria Substation, two TSPs would be installed within the 100-year flood zone as mapped by FEMA. These structures are not anticipated to impede or redirect flood flows because of their size and shape. In addition, the proposed project would result in the replacement of lattice steel poles with TSPs in the immediate vicinity of the Carpinteria Substation. TSPs are less likely to catch and retain debris during a flood event than lattice steel poles and less likely to result in an impediment to or redirection of flood flows. Therefore, any potential operation impacts would be less than significant.

Impact HY-8: Risk of loss, injury or death involving flooding.
LESS THAN SIGNIFICANT

Construction Impacts

Only the Carpinteria and Casitas Substations are located near FEMA-designated 100-year flood hazard zones. The Casitas Substation is located downstream of the Lake Casitas Reservoir Dam, the Matilija Reservoir Dam, and the Los Robles Diversion Dam. This substation, however, is located outside of, and at an elevation approximately 20 feet higher than, the Ventura River floodplain. Construction in Segment 4, near the Carpinteria Substation would be conducted during the dry season, to the extent possible. Therefore, workers would not be exposed to the potential of loss, injury or death involving flooding. Impacts under this criterion would be less than significant.

Operation Impacts

Only the Carpinteria and Casitas Substations are located near FEMA-designated 100-year flood hazard zones. The subtransmission infrastructure is un-staffed and would continue to be so during project operations. Therefore, workers would not be exposed to the potential of loss, injury, or death involving flooding. In addition, the proposed project would result in the replacement of

lattice steel poles with TSPs in the immediate vicinity of the Carpinteria Substation. TSPs are less likely to catch and retain debris during a flood event than lattice steel poles and less likely to result in an impediment to or redirection of flood flows. Impacts under this criterion during operation would be less than significant.

Impact HY-9: Risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

LESS THAN SIGNIFICANT

A seiche is a standing wave of water on a river, lake, pond, gulf, or bay caused by an earthquake. A tsunami, or tidal wave, is a wave of water on the ocean caused by an undersea earthquake.

Construction Impacts

The proposed project is not located near enough to any water body that could generate a seiche in the event of an earthquake for any project workers or infrastructure to be at risk of loss, injury, or death. In addition, the proposed project would be constructed in mountainous areas high above sea level. These locations are well outside of mapped tsunami inundation areas (CDC 2009a, 2009b, 2009c, and 2009d). Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death by seiche or tsunami.

A mudflow is a downhill movement of soft, wet earth and debris caused by a rapid and heavy accumulation of rain or snowmelt in areas subject to potential for landslides. As discussed in Section 4.6, "Geology, Soils, and Mineral Resources," the proposed project would be located within areas of earthquake-induced landslide potential. The applicant would employ APM GEO-1, which involves the completion of geotechnical studies prior to construction and would employ measures recommended in the geotechnical studies during construction to address potential impacts related to geological instability. Project components would meet applicable state seismic safety standards, including special foundation design, additional bracing, and structure support. The proposed project would not involve the development of structures or facilities designed for human occupation, and construction activities would take place during the dry season, to the extent feasible. Therefore, any potential impacts would be less than significant.

Operation Impacts

The proposed project would not be located near enough to any water body that could generate a seiche in the event of an earthquake and is well outside of mapped tsunami inundation areas. Project components and structures would be sited in areas susceptible to mudflow, but the applicant would implement project design features such as retaining walls that would reduce the potential for infrastructure to be impacted by a mudflow during operations. The applicant would conduct periodic maintenance patrols during operations to identify and address areas of active slope instability. Therefore, impacts under this criterion during operations would be less than significant.

4.9.4 Mitigation Measures

There are no MMs specific to hydrology and water quality.