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4.9 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the project:	Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less Than Significant Impact	No Impact
e. Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.9.1 Introduction

The purpose of this section is to document existing conditions of surface water and groundwater resources in the Proposed Project area, as well as to assess potential impacts that might occur as a result of Proposed Project implementation. In addition, this section is intended to evaluate the Proposed Project for potential impacts resulting from flood hazards or inundation from seiche, tsunami, or mudflow. Impacts related to hydrology and water quality would be less than significant for the Proposed Project.

4.9.2 Methodology

Hydrology and water quality in the Proposed Project area were evaluated by reviewing the City of Chula Vista's Development Storm Water Manual and map of drainage watersheds (2011). Aerial photographs of the Proposed Project area were also reviewed. The San Diego RWQCB's Water Quality Control Plan for the San Diego Basin was reviewed to ensure compliance with state and local regulations (RWQCB 2007). Federal Emergency Management Agency (FEMA) maps were referenced for flood zones (FEMA 2012).

4.9.3 Existing Conditions

A description of the regulatory requirements and overall existing hydrologic conditions for the Proposed Project is provided below.

4.9.3.1 Regulatory Background

The San Diego Hydrologic Planning Basin (San Diego Basin), in which the Proposed Project is located, encompasses approximately 3,900 square miles of surface area. The San Diego Basin falls under the jurisdiction of the San Diego RWQCB. San Diego County and the other municipal storm water co-permittees located within the San Diego Basin were mandated by the San Diego RWQCB to regulate discharges from permittees' storm drains to surface waters of the state.

The following authorities regulate water quality in the Proposed Project area:

- U.S. Environmental Protection Agency (USEPA)
- California State Water Resources Control Board (SWRCB)
- San Diego RWQCB
- County of San Diego
- City of Chula Vista

The following sections describe applicable federal, state, and local water quality requirements.

Federal and State

Clean Water Act

The Federal Water Pollution Act, enacted in 1948, established the basic structure for regulating discharge of pollutants into waters of the U.S. and regulating water quality standards for surface waters. The Federal Water Pollution Act was significantly reorganized and expanded in 1972, and the "Clean Water Act" (CWA) became its common name. 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 and tributaries thereto, and adjacent wetlands.

In 1972, the CWA was amended to specify that the discharge of pollutants to waters of the U.S. from any point source is unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial

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storm water discharges under the NPDES program. USEPA has authorized the RWQCBs to implement this program.

Section 303

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the U.S. based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on bio-monitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numeric standards. Water quality standards applicable to the Proposed Project are listed in the Water Quality Control Plans for the San Diego Basin, Region 9 (Basin Plans) (RWQCB 1994, 2007).

The Basin Plan list includes waters that do not meet water quality standards necessary to support a waterway's beneficial uses, even after the minimum required levels of pollution control technology are installed. Listed water bodies are priority ranked for development of a total maximum daily load (TMDL). A TMDL is a calculation of the "amount" of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. TMDLs include waste load allocations for urban storm water runoff, as well as municipal and industrial wastewater discharges, with allocations apportioned for individual municipal separate storm sewer systems (MS4s) and wastewater treatment plants. The SWRCB, RWQCBs, and USEPA are responsible for establishing TMDL waste load allocations and incorporating approved TMDLs into water quality control plans, NPDES permits, and waste discharge requirements (WDRs) in accordance with a specified schedule for completion.

Section 401

Under CWA Section 401, any applicant for a federal permit or license to conduct any activity that may result in a discharge into jurisdictional waters of the U.S. must obtain a water quality certification from the state that the proposed activity would comply with the state's water quality standards. Most 401 Certifications are issued in connection with USACE CWA Section 404 permits for dredge and fill discharges. The SWRCB and RWQCB implement the Section 401 Certification program.

Section 402

The NPDES storm water permitting program, under Section 402(d) of the CWA, is administered by the SWRCB and RWQCB on behalf of USEPA. Section 402(d) establishes a framework for regulating nonpoint-source storm water discharges (33 USC 1251). The NPDES program objective is to control and reduce pollutants to water bodies from surface water discharges, which includes municipal and industrial wastewater and storm water runoff. Under the CWA, discharges of pollutants to receiving waters are prohibited unless the discharge is in compliance with an NPDES permit. The NPDES permit specifies discharge prohibitions, effluent limitations, and other provisions such as monitoring deemed necessary to protect water quality based on criteria specified in the National Toxics Rule, the California Toxics Rule, and the Basin Plan.

Section 404

Under Section 404, USACE and USEPA regulate the discharge of dredged or fill material into waters of the U.S. The phrase “waters of the U.S.” includes wetland and non-wetland aquatic habitats within the jurisdictional extent of rivers and streams defined by the ordinary high water mark. Such discharges may result from navigational dredging, flood control channelization, levee construction, channel clearing, fill of wetlands for development, or other activities. These projects involve removal or placement of soil, sediment, and other materials in or near water bodies, and require Section 404 permits from USACE. Please refer to Section 4.4, Biological Resources, for a further discussion of waters of the U.S.

National Flood Insurance Program and Flood Disaster Protection Act

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were enacted to reduce the need for flood protection structures and to limit disaster relief costs by restricting development in floodplains. The Federal Emergency Management Agency (FEMA), created in 1979, is responsible for predicting hazards related to flooding events and forecasting the level of inundation under various conditions. As part of its duty to develop standards for delineating fluvial and coastal floodplains, FEMA provides information about flood hazard and inundation potential on Flood Insurance Rate Maps (FIRMs) used in the National Flood Insurance Program (NFIP), and, where appropriate, designates regions as special flood hazard areas. Special flood hazard areas are defined as areas that have a 1% chance of flooding in a given year, which are commonly known as a FEMA designated 100-year floodplain.

FEMA also administers the NFIP, a federal program that enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages.

Within the floodplain, non-residential development is allowed and construction activities are restricted within flood hazard areas, depending on the potential for flooding identified within a specific area. Title 44, Part 60 of the CFR provides measures requiring that municipalities participating in the NFIP adopt specific standards aimed at reducing flood hazards by regulating construction and development activities within the designated 100-year flood hazard areas.

State

Porter Cologne Water Quality Control Act

The California Porter-Cologne Water Quality Act (Porter-Cologne) provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designated the SWRCB as the ultimate authority over California water rights and water quality policy, and also established nine RWQCBs to oversee water quality on a day-to-day basis at the local/regional level. Each RWQCB has responsibility to grant NPDES permits for storm water runoff from construction sites or grant a waiver for “low threat” discharges from short-term construction dewatering operations to land.

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State Water Resources Control Board Order 2009-009-Division of Water Quality

Projects that disturb 1 acre or more of soil are required to obtain coverage under the SWRCB's General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-Division of Water Quality (DWQ) (General Permit). To obtain coverage under the General Permit, Permit Registration Documents, including a Notice of Intent, SWPPP, risk assessment, site map, certification, and annual fee, must be submitted electronically to the SWRCB prior to initiating construction activities. Two SWPPPs would be prepared for the Proposed Project: a traditional SWPPP for the Salt Creek Substation component and a linear SWPPP for the TL 6965 and distribution facilities outside of the Salt Creek Substation property. The SWPPPs would include the following:

- identification of pollutant sources and non-storm-water discharges associated with construction activity;
- specifications for BMPs that would be implemented, inspected, and maintained during Proposed Project construction to minimize erosion and the potential for accidental releases, and to minimize pollutants in the runoff from the construction areas, including pollutants from storage and maintenance areas and building materials laydown areas;
- specifications for spill response and implementation;
- a record of training provided to persons responsible for implementing the SWPPP;
- reporting and record keeping requirements; and
- if required, a plan for water sampling and analyzing pollutants to ensure that the Numeric Action Levels are met and that Numeric Effluent Limitations are not exceeded.

In addition, as the weather dictates, a specific Rain Event Action Plan would be prepared as required for all phases of construction.

State Water Resources Control Board Order 2001-11-DWQ

The SWRCB adopted a statewide permit for dewatering utility vaults and underground structures (Statewide General NPDES Permit for Discharges from Utility Vaults & Underground Structures to Surface Waters [General Permit CAG990002]) in 2001. This permit is used by permittees for the discharge of uncontaminated water from vaults and substructures (i.e., water not related to construction groundwater dewatering) to surface waters.

California Department of Fish and Wildlife Lake and Streambed Alteration Agreement Program

CDFW is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code (Section 1602) requires an entity to notify CDFW (Ecosystem Conservation Division) of any proposed activity that may substantially modify a river, lake, or stream. Refer to Section 4.4, Biological Resources, for a further discussion.

Regional Water Quality Control Board, San Diego Region

The San Diego RWQCB has the authority to waive the requirements that a person file a report of waste discharge (RoWD) and/or be issued WDRs prior to initiating a discharge to surface waters not subject to federal NPDES regulations. Specifically, Section 13269 of the Porter-Cologne Water Quality Control Act (Water Code) gives the San Diego RWQCB the authority to waive the requirements of Water Code Sections 13260(a) and (c), 13263(a), and 13264(a) for specific discharges or specific types of discharge, provided the waiver is consistent with the Basin Plan and is in the public interest. A waiver is available for a discharge if it can comply with the conditions of the waiver. Discharges that comply with the conditions of a waiver are expected to pose a low threat to the quality of waters of the state. Dischargers that cannot comply with the waiver conditions must file a RoWD with the San Diego RWQCB.

Resolution No. R9-2007-0104 was adopted by the San Diego RWQCB on October 10, 2007, which amends the Basin Plan to renew and issue the revised conditional waivers. Except for the waiver conditions pertaining to composting operations, the SWRCB approved Resolution No. R9-2007-0104 on November 4, 2008. The Office of Administrative Law (OAL) approved Resolution No. R9-2007-0104 on February 3, 2009. There are 11 conditional waivers that may be available for 34 specific types of discharge within the San Diego Region. Dischargers must comply with the waiver conditions to be eligible for a waiver of the requirement to file a RoWD and/or issuance of WDRs.

Conditional Waiver No. 2 is for “low threat” discharges to land, which can percolate to groundwater. Low threat discharges include liquid wastes containing pollutant concentrations that are not expected to adversely impact the quality of waters of the state under ambient conditions. Low threat discharges may include potable water or uncontaminated groundwater. Potable water and uncontaminated groundwater are not considered waste when initially discharged. However, when it comes into contact with pollutants and transports those pollutants in surface runoff or leaches those pollutants into the soil and groundwater, it becomes a waste. Low threat discharges to land are not expected to contain significant concentrations of pollutants that can adversely affect the quality of underlying groundwater. Discharges from short-term construction dewatering operations to land may be eligible for Conditional Waiver No. 2.

Local

County of San Diego

The northernmost portion (approximately 4,700 feet) of the Proposed Project, the power line and the Existing Substation, are located within an unincorporated portion of San Diego County. The San Diego RWQCB issued a Municipal Permit (NPDES No. CA0108758) to the co-permittees (includes San Diego County, the San Diego Unified Port District, the San Diego County Regional Airport Authority, and 18 cities in the region) with the primary goal of preventing polluted discharges from entering the storm water conveyance system and local receiving and coastal waters. Pursuant to this permit, co-permittees are required to develop and implement measures that would address and prevent pollution from development projects.

City of Chula Vista

The proposed Salt Creek Substation and a majority of the associated power line would be located within the City of Chula Vista. The co-permittees for the Municipal Permit include Chula Vista. Consistent with the Municipal Permit, Chula Vista Municipal Code Chapters 14.20 and 15.04 prohibit discharge into storm water conveyance systems that results in or contributes to a violation of the Municipal Permit. Discharges that are regulated under an individual NPDES permit issued directly to the discharger are exempt from the requirements and prohibitions of the co-permittees' Municipal Codes. Chula Vista prepared its Development Storm Water Manual (2011) to provide general information on how to comply with Chula Vista's construction and permanent storm water BMP requirements, including the Chula Vista Standard Urban Storm Water Mitigation Plan (SUSMP). All development projects that obtain their grading, construction, or building permit after March 24, 2010, are required to comply with requirements of the Municipal Permit.

Chula Vista's SUSMP requires preparation of a Water Quality Technical Report to address all site, source, and treatment control BMPs for the Proposed Project, as well as any long-term maintenance activities that are required. The Water Quality Technical Report would be submitted to Chula Vista with the final grading plans when ministerial permits from Chula Vista are required.

As of early 2013, the San Diego RWQCB is in the process of finalizing the Regional MS4 Storm Water NPDES Permit (Regional MS4 Permit) to update the Municipal Permit. The San Diego RWQCB will likely issue the Regional MS4 Permit in mid-2013 (RWQCB 2013). Once this permit is issued, Chula Vista will revise its SUSMP accordingly.

4.9.3.2 Surface Water and Groundwater Resources

General Setting

Watersheds within the San Diego RWQCB Basin all ultimately drain to the Pacific Ocean and include the San Dieguito, Los Peñasquitos, San Diego, Pueblo, Sweetwater, Otay, and Tijuana watersheds. The Proposed Project area lies within the Otay and Sweetwater Basins (RWQCB Region 9 designated numbers of 910 and 909).

Natural drainage patterns were modified largely to protect against the risk of flooding in Chula Vista, which is highly urbanized. Storm water within Chula Vista is largely conveyed into natural drainages, portions of which were modified or are built drainages, together comprising Chula Vista's MS4.

Water from rain events within Chula Vista flows into the MS4 and ultimately drains into receiving water bodies such as rivers, reservoirs, or bays. The MS4 also directs water into the Pacific Ocean. Generally, the drainage system for majority of the Proposed Project, including the proposed Salt Creek Substation, flows south or southwest into the Otay River and San Diego Bay.

The northern portion of the power line route and the Existing Substation are located in an unincorporated portion of the County of San Diego. The northern portion of the Proposed Project drains west to the Sweetwater River and then to San Diego Bay.

Winter storms usually occur during mid-October to May, with the greatest frequency and intensity typically occurring from December to March. These storms usually originate over the Pacific Ocean as a result of the interaction between Polar Pacific and Tropical Pacific air masses, and move eastward over the San Diego area. This type of storm occasionally lasts for several days. Generally, more precipitation falls in the mountains than over the coast due to increased condensation from the presence of cooler air at higher elevations.

Summer storms, including tropical cyclones, occur on a few occasions in the summer and early fall. These storms usually occur near the end of the dry season in August and September. They rarely result in any major flooding.

Local storms can occur at any time of the year, either during general storms or as isolated phenomena. Local summer storms occur more frequently in the higher mountains than on the coast. These storms, which normally result from a flow of moist air into the region from the south and east, cover comparatively small areas, but are characterized by high-intensity precipitation for 3 hours or less.

Local winter storms can occur on occasion in conjunction with a strong cold front or deep upper-level low-pressure center, and are sometimes imbedded within a general winter storm. Like their summer counterparts, local winter storms result in high-intensity precipitation for a short duration over small areas. Mean seasonal precipitation in the San Diego area from all storm types ranges from a low of 3 inches in the eastern desert regions of the county to highs of 35 to 40 inches in the Cuyamaca and Laguna Mountains.

Average annual rainfall in the area is approximately 10 inches per year, with the majority of precipitation falling between November and April. Rainfall between June and October averages less than 0.5 inch per month (Western Regional Climate Center 2012).

Surface Water

Channels, Creeks, and Rivers

Many rivers and creeks in San Diego County are intermittent due to the seasonal nature of rainfall and the relatively low yearly rainfall totals. Some drainages have perennial and intermittent segments due to effects from dams or other artificial blockages. Imported water adds to each watershed in the form of runoff from urban, agricultural, and water storage activities, sometimes producing flow in drainages when they would otherwise be dry.

The San Diego RWQCB identifies surface water watersheds within its boundaries. Chula Vista also identifies storm water drainage basins within Chula Vista boundaries that are part of its municipal storm drain system.

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The Salt Creek Substation site and a majority of the power line route are located within the watersheds of the Salt Creek and Poggi Canyon Creek tributaries of the Otay River (Otay Valley hydrologic unit).

The Salt Creek Substation site currently drains in two directions via existing concrete brow ditches. Half of the site drains in the southwesterly direction and the other half drains southeast. An existing 96-inch-diameter reinforced concrete pipe storm drain is located within the existing canyon fill, below the western end of the access road to the southeast of the Salt Creek Substation site; it discharges at the base of the slope (Kleinfelder 2008). The entire site ultimately drains south to a tributary to Salt Creek.

A portion of TL 6965 located in the area along SR-125 and Otay Lakes Road is located in the Telegraph Canyon Creek watershed, which is part of the Sweetwater River Watershed. Another portion of TL 6965 located in the area along SR-125 and Otay Lakes Road crosses over the Telegraph Canyon Creek drainage, and a portion of TL 6965 located in the area of Eastlake Parkway crosses over the Poggi Canyon Creek drainage.

The northernmost portion of TL 6965 and the Existing Substation are located in the Middle Sweetwater Hydrologic Area (identified as the Sunnyside drainage basin by Chula Vista). This hydrologic area is within the Sweetwater River Watershed, just below the Sweetwater Reservoir. The northernmost portion of the proposed power line route would cross a drainage that is named as a tributary of the Sweetwater River.

Wetlands

Wetland vegetation communities identified during biological field surveys are located within the study area for the proposed Salt Creek Substation, Transmission Corridor, and associated buffer zone for the power line. Refer to Section 4.4, Biological Resources, for additional detail regarding USACE, CDFW, and San Diego RWQCB jurisdictional resources, and the biological value of the wetland areas associated with the Proposed Project.

Reservoirs, Ponds, Lakes

No reservoirs, ponds, or lakes are located on the Salt Creek Substation site. No such water bodies would be crossed or impacted by the Proposed Project. The Upper and Lower Otay Reservoirs are located 1.5 miles and 0.6 mile, respectively, to the northeast and east of the proposed Salt Creek Substation. The Sweetwater Reservoir is located approximately 1 mile north and to the east of the northern-most portion of the power line and the Existing Substation. A portion of the power line route is approximately 500 feet to the east of East Lake. East Lake is surrounded by residential development and is not fed by a drainage way. The Otay and Sweetwater Reservoirs and East Lake are located in watersheds that are adjacent to the watersheds where the Proposed Project would be located. Therefore, the Proposed Project would not be upstream or downstream of these nearby water bodies.

Surface Water Quality

Surface water quality is affected by storm water runoff and runoff from industrial, commercial, and agricultural activities. The proposed TL 6965 route would cross two impaired water bodies:

the upper portion of Poggi Canyon Creek, which is listed on the California Section 303(d) list for toxicity and is a tributary of the Otay River that discharges into San Diego Bay; and Telegraph Canyon Creek, which is listed on the California Section 303(d) list for selenium and discharges into San Diego Bay. San Diego Bay is listed on the California Section 303(d) list for polychlorinated biphenyls (PCBs) (SWRCB 2010).

Groundwater

Groundwater basins are present along major drainages in San Diego County. Groundwater recharge occurs from dam releases and underflow past existing dams. Other sources of recharge may include precipitation, stream flow, and discharges from municipal wastewater treatment plants. The Proposed Project would be located in the Otay Valley and Lower Sweetwater hydrologic areas (groundwater basins) of the Southern San Diego Unit.

Groundwater was not encountered by exploratory borings on the proposed Salt Creek Substation site when the geotechnical investigation was conducted (Kleinfelder 2008). The 2008 geotechnical report estimated that perched groundwater in the filled drainage to the west of the proposed Salt Creek Substation site was approximately 225 to 230 feet in elevation. Using an estimated ground surface elevation of approximately 450 feet amsl at the proposed Salt Creek Substation site, groundwater would be approximately 200 feet below the ground surface (bgs) (Kleinfelder 2008). Groundwater levels may fluctuate due to seasonal variations, irrigation, and other factors. Groundwater or seepage is not expected to be a constraint to construction of the Proposed Project.

The geotechnical investigation conducted for the proposed TL 6965 power line encountered groundwater only in one of the nine borings drilled along the proposed TL 6965 route (Geosyntec 2012). Groundwater was observed within alluvium at Boring B-5, at a depth of approximately 11 feet bgs. This depth to groundwater represents conditions observed at the time of drilling and may not be indicative of stabilized water levels at this location. With the exception of Boring B-5, regional groundwater was not encountered in the current or previous explorations performed within the Proposed Project alignment. The 2012 geotechnical report stated that regional groundwater is expected to be greater than 40 feet bgs. Perched groundwater or localized zones of wet materials were observed in the borings. Based on Geosyntec's experience from other field investigations and similar sedimentary bedrock terrain, zones of perched groundwater are anticipated during foundation excavation (Geosyntec 2012).

Water Supply

Domestic water supply for the area encompassing the Proposed Project as well as the eastern portions of Chula Vista is supplied by the Otay Water District. The Otay Water District purchases water from the San Diego County Water Authority (SDCWA), a public agency that operates as a wholesale water supplier in San Diego County. Much of this water is purchased from the Los Angeles-based Metropolitan Water District of Southern California, another public agency that imports water from Northern California (through the State Water Project) and the Colorado River. In addition to purchasing drinking water from the SDCWA, the Otay Water District purchases drinking water from the Helix Water District and the City of San Diego. The Otay

Water District reports that 6% of its water supply portfolio in the future will be from groundwater sources (Otay Water District 2013).

The Otay Water District operates a water recycling facility that produces approximately 1.3 million gallons per day of recycled water from wastewater and also operates a recycled water distribution system to reduce the demand for potable water. The current distribution system targets landscaping uses such as golf courses and other commercial interests, and covers the northeastern portion of Chula Vista. Plans to extend the recycled water distribution system include a line placed in Hunte Parkway, adjacent to the proposed Salt Creek Substation site (Otay Water District 2013).

Floodplains

Based on FEMA FIRMs (FEMA 2012), the proposed Salt Creek Substation site and the entire power line route are in FEMA Zone X. Therefore, the Proposed Project would be outside of designated 100-year and 500-year flood hazard zones and would be subject to minimal flooding.

The closest that the power line route comes to 100-year or 500-year flood hazard zones is at the intersection of SR-125 and Otay Lakes Road. At this location, the power line route is approximately 100 feet from the limits of the flood hazard zone, but does not cross over the flood hazard zone. At the specific location that the power line route crosses the drainage for Telegraph Canyon Creek, the FIRM states that the 500-year flood discharge is contained in a culvert, so the designated flood hazard zone was deleted from the FIRM at this location (FEMA 2012).

Dam Failure Inundation Areas

The State Emergency Management Agency and the California Department of Water Resources maintain a list of areas that are subject to potential inundation in the event of dam failures. This list is intended to guide local jurisdictions in developing evacuation plans for areas located below such dams. Estimated times when floodwaters would arrive at certain locations downstream are also provided to guide such planning efforts. No dams are located upstream of the Proposed Project area.

4.9.4 Impacts

4.9.4.1 Significance Criteria

According to Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on hydrology and water quality if it would do any of the following:

- violate any water quality standards or waste discharge requirements;
- 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;

- 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;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- create or contribute to runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, FIRM, or other flood hazard delineation map;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- 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; and/or
- cause inundation by seiche, tsunami, or mudflow.

4.9.4.2 Impact Analysis

Grading and construction activities required for the proposed Salt Creek Substation would substantially alter existing on-site drainage patterns, but would not significantly alter drainage discharge to Salt Creek or create substantial sources of polluted runoff. The proposed Salt Creek Substation design includes a water quality and hydromodification basin that would alter drainage patterns on-site, but would also control runoff from the proposed Salt Creek Substation. Grading and construction activities required for the proposed associated power lines and distribution circuits would not substantially alter existing on-site drainage patterns, nor create substantial sources of polluted runoff. In addition, impacts resulting from flood hazards or exposure of people or structures to a significant risk of loss, injury, or death involving flooding or inundation by seiche, tsunami, or mudflow are considered less than significant. Adherence to SDG&E's SWPPPs under the State General Construction Permit; environmental standards relative to SDG&E's Water Quality Construction BMP Manual; and applicable federal, state, and local regulations would bring impacts to less-than-significant levels.

Question 4.9a – Water Quality Standards and Waste Discharge Violations

Potential impacts on hydrology and water quality of greatest concern involve negative effects due to ground disturbance (erosion and sedimentation), potential storm water runoff related to construction activities, and use of hazardous materials. However, these potential impacts are considered less than significant by incorporating SDG&E's SWPPPs under the State General Construction Permit and implementing BMPs from the SDG&E BMP Manual. In addition, as part

of the SWPPPs, all crew and on-site personnel would receive SWPPP training. Therefore, the Proposed Project would not result in a prohibitive discharge as defined in the Water Quality Control Plan for the San Diego Basin, increase pollutant loads that exceed water quality standards for the Poggi Canyon or Telegraph Canyon Creeks, or conflict with any water quality objectives. As a result, impacts would be less than significant.

Construction – Less-than-Significant Impact

Salt Creek Substation

Potential temporary, short-term impacts on surface water and groundwater quality that could occur during construction of the proposed Salt Creek Substation on access roads, at structure locations, and at temporary work areas are as follows:

- an accidental release of diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, or lubricating grease from a vehicle or construction equipment, and/or
- a release of materials during concrete preparation or placement of foundations, concrete washout stations, and concrete splice vaults.

Such spills could wash into nearby drainages or infiltrate into the soil, resulting in surface water or groundwater quality degradation. These potential temporary, short-term impacts would be minimized by compliance with applicable federal, state, and local laws, and through the proper implementation of the SWPPP and SDG&E's BMP Manual.

Hazardous materials would be delivered, stored, managed, and disposed of according to BMPs outlined in SDG&E's BMP Manual. SDG&E's BMP Manual outlines several BMPs to store, use, and control spills, if one should inadvertently occur. Section 4.8, Hazards and Hazardous Materials, includes additional detail regarding hazardous materials for the Proposed Project. As such, potential discharges would be controlled, water quality standards would be adhered to, and no impacts to wastewater quality would occur with Proposed Project construction. As a result, impacts would be less than significant.

In accordance with the SWPPP prepared under the State General Construction Permit, approved erosion-control measures such as gravel bags, silt fences, straw wattles, or temporary catch basins would be used during grading operations.

Grading would direct storm water from the access road and substation pad southwesterly toward a water quality and hydromodification basin located in the southwestern portion of the substation pad. A storm drain from the water quality basin would convey runoff discharge to the existing 96-inch-diameter storm drain dissipater southwest of the site. Substation runoff would then enter Salt Creek. Storm water from the graded slopes of the pad would be directed toward the existing southwestern dissipater or toward the existing off-site surface drainage swale southeast of the site. This natural drainage swale discharges to Salt Creek southeasterly of the existing dissipater. As a result, impacts would be less than significant.

TL 6965 and TL 6910 Loop-In, Existing Substation Modifications, and Staging Yards

Groundwater impacts for construction of the TL 6965, including the loop-in, modifications at the Existing Substation, and staging yards, would be similar to those identified for the proposed Salt Creek Substation. Potential temporary impacts on surface water and groundwater quality that could occur during construction are as follows:

- an accidental release of diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, or lubricating grease from a vehicle or construction equipment; and/or
- an accidental release of materials during concrete preparation or placement of foundations, concrete washout stations, and concrete splice vault.

BMPs specific to staging yard ingress and egress and perimeter protection would be outlined in the linear SWPPP. In addition, avoidance/protection of any storm water facilities within or in proximity to TL 6965, the Existing Substation, and staging yards would be outlined in the linear SWPPP.

These potential temporary impacts would be minimized by complying with applicable federal, state, and local laws, and by implementing the linear SWPPP under the State General Construction Permit and the BMPs from the SDG&E BMP Manual. As a result, impacts would be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Areas affected by the Proposed Project would be stabilized using BMPs, including installation of landscaping and road-base or gravel at the proposed Salt Creek Substation site to permanently stabilize ground surfaces. These measures, in addition to using a water quality and hydromodification basin, would minimize potential sediment discharge into on-site or off-site waters.

SDG&E operations and maintenance personnel may use oils, paint, or solvents in the course of routine maintenance at the proposed Salt Creek Substation. These materials would not be stored or disposed of at the substation, and their use would conform to applicable laws, regulations, and operating procedures governing the use, management, and disposal of hazardous materials.

Some equipment used at the proposed Salt Creek Substation, such as the transformers or capacitor banks, would contain mineral oil. As such, a mineral-oil release from electrical equipment associated with operation of the substation could occur. Such releases, either from leaks or equipment failure, could wash into nearby waterways or infiltrate soil to groundwater. To prevent this, the proposed Salt Creek Substation design includes a concrete containment basin proposed along the southern portion of the substation. This basin would be configured to contain the volume of oil in the largest transformer. Although the mineral oil is non-toxic, the CWA and Porter-Cologne Water Quality Act prohibit the release of any oil to state waters. Implementation of SDG&E's Spill Prevention Plan would ensure that any potential release or

spill of hazardous materials during operation of the proposed facilities is properly handled and reduces potential impacts to less than significant.

A Water Quality Technical Report would be prepared for the Proposed Project in accordance with Chula Vista's SUSMP and would address all site, source, and treatment control BMPs for the Proposed Project and any long-term maintenance activities that are required. As a result, impacts would be less than significant.

Question 4.9b – Groundwater Depletion or Recharge

Construction – Less-than-Significant Impact

Salt Creek Substation

During construction, water from the Otay Water District's reclaimed or potable water system would be used for dust control and grading activities. All unpaved construction areas would be sprayed with water or other acceptable dust-control agents during dust-generating activities to reduce potential emissions. The Otay Water District produces 1.3 million gallons per day of recycled water, and distributes recycled water for landscaping and commercial uses within the Proposed Project area. A daily maximum of approximately 30,000 gallons of water would be used for dust control during construction of the Salt Creek Substation. Since the quantity of unpaved construction area is relatively small, the volume of water required for dust control would not be significant relative to the available water system's supply, and would not impact existing water supply. In addition, groundwater contributes only 6% to the total water supply for the Otay Water District. As a result, impacts on groundwater supply would be less than significant.

No dewatering is anticipated during construction, since groundwater was not encountered during the proposed Salt Creek Substation geotechnical investigation. However, where localized shallow groundwater is encountered, dewatering systems, as outlined in SDG&E's BMP Manual, may be installed in trenches and excavations, as appropriate, to allow construction under dry conditions. Dewatering activities may have localized effects on groundwater levels. However, the effects would be temporary and are not expected to affect any area wells. Therefore, impacts on groundwater recharge during construction would be less than significant. Any short-term construction dewatering operations would comply with San Diego RWQCB permit requirements.

TL 6965 and TL 6910 Loop-In, Existing Substation Modifications, and Staging Yards

Impacts relative to groundwater supplies and recharge for the TL 6965 and TL 6910 loop-in and associated trenching and duct installation, modifications at the Existing Substation, and staging yards would be similar to that identified for construction of the proposed Salt Creek Substation. As construction of the TL 6965 and TL 6910 loop-in would occur within the existing ROW, significant generation of dust is not anticipated. There would be some water use for dust suppression for pull sites and active access roads, a daily maximum of approximately 30,000 gallons of water, but not significant water use for dust suppression. During construction of the Existing Substation modifications, water from Chula Vista's public water system or the Otay

Water District's reclaimed water system would be used to supply water for dust control, if necessary. As a result, impacts to groundwater supply during construction would be less than significant.

No dewatering is anticipated during construction. If groundwater were encountered, it would likely occur during construction of the TL 6965 drilled pier foundations or the underground duct bank segment. Where localized shallow groundwater is encountered, dewatering systems, as outlined in SDG&E's BMP Manual, may be installed in trenches and excavations to allow for construction under dry conditions. Dewatering activities may have localized effects on groundwater levels. However, the effects would be temporary and are not expected to affect area groundwater within Chula Vista or other nearby areas. Therefore, impacts on groundwater recharge during construction would be less than significant. Any short-term construction dewatering operations would comply with San Diego RWQCB permit requirements.

Operation and Maintenance – Less-than-Significant Impact

The majority of post-construction water used for the Proposed Project would be for landscape irrigation. Water for irrigation would be provided by the existing reclaimed water supply system, Otay Water District, if available. Otherwise, domestic water supply would be used, which, for the most part, is not reliant on groundwater resources.

A limited amount of water would be required for long-term operation and maintenance of the Salt Creek Substation. As applicable, recycled or domestic water would primarily be used for fire protection and other general operational uses. Water would be obtained from the Otay Water District, which currently has adequate water to supply the site. In addition, the Proposed Project would continue to direct all runoff to the surrounding large areas of permeable ground and the water quality basin, allowing water to continue to infiltrate the ground surface and/or be transported to the storm drain system. As such, operation and maintenance activities would not affect existing groundwater supplies. As a result, impacts on groundwater reserves or recharge capabilities from operation would be less than significant.

Question 4.9c – Drainage Patterns – Erosion/Siltation

Construction – Less-than-Significant Impact

Salt Creek Substation

The Proposed Project would include substantial grading and earthmoving, as discussed in Section 3.6. Existing on-site vegetation would be removed during grading activities and soils would be disturbed, making the site more susceptible to erosion caused by wind or water. Storm water run-on and runoff have the potential to detach and transport soil particles and deleterious material from bare soils and deposit them in nearby waterways. Sediment can result in increased turbidity in waterways, impair riparian habitat, restrict recreational uses, and cause the transport of other pollutants. Construction vehicles and equipment may also disturb underlying soils through the transport of soils from construction areas to adjacent area roadways, thereby further eroding the ground surface. Water trucks used during construction

to assist with soil compaction and abate fugitive dust would also have the potential to cause erosion.

SDG&E's grading and improvement plans would incorporate grading, drainage, and structural water quality elements to minimize surface runoff and erosion impacts. In general, the proposed Salt Creek Substation pad is divided from north to south. A small northwest to southeast divide characterizes existing site terrain and controls local storm water runoff. Generally, surface runoff from the existing site is to the west and to the east from this small divide, before going to the natural water course that runs from west to east along the south side of the substation site. The western portion of the pad would be graded to drain southwest. The eastern portion of the pad would be graded to drain toward the south. A water quality and hydromodification basin would be constructed in the southwestern portion of the proposed Salt Creek Substation. A storm drain from the water quality basin would convey runoff discharge to the existing 96-inch-diameter storm drain dissipater southwesterly of the site. The basin would store and slowly release water into the storm drain. Installation of the water quality basin, as well as discharging to the existing 96-inch-diameter storm drain dissipater, would reduce potential impacts on existing drainage patterns in the area downstream of the proposed Salt Creek Substation pad by ensuring that runoff does not alter any swales or other drainage features beyond the proposed Salt Creek Substation limits. As such, runoff from the proposed Salt Creek Substation site would not result in significant erosion as compared to existing conditions. Impacts would be less than significant.

With implementation of SDG&E's SWPPP and measures from SDG&E's BMP Manual, including installation of silt fences, fiber rolls, and gravel bags, the potential for the Proposed Project to impact water quality as a result of erosion and sedimentation would be less than significant. Sediment would be prevented from entering the storm drain system through use of gravel bag berms, and tracking controls would be used to minimize construction traffic tracking dirt onto adjacent roadways. Incorporation of these and other BMPs as outlined in the BMP Manual would ensure that potential impacts would be less than significant.

TL 6965 and TL 6910 Loop-In, Existing Substation Modifications, and Staging Yards

Existing drainage patterns would not be significantly changed with the proposed modifications. As such, the potential for erosion or siltation to occur as a result of TL 6965 construction is considered less than significant because existing drainage patterns would not be substantially changed. Impacts on water resources and water quality would be less than significant with implementation of SDG&E's linear SWPPP and BMP Manual. Therefore, the potential for impacts on water quality as a result of erosion and sedimentation would be less than significant.

Operation and Maintenance – Less-than-Significant Impact

A water quality and hydromodification basin is planned in the southwest corner of the proposed Salt Creek Substation. The water quality basin would be designed to meet volume, area, depth, and detention time objectives of the San Diego RWQCB and City of Chula Vista. The preliminary proposed Salt Creek Substation layout includes a 15,500-square-foot area for a 4-

foot-deep basin. With 3:1 side slopes, this would provide a detention volume of approximately 49,700 cubic feet. This preliminary design is conservative, and further analysis should yield design criteria substantially less than indicated above. The basin would also serve to meet San Diego County hydromodification requirements. Approximately 75,000 square feet of impervious area is planned for the proposed Salt Creek Substation. The preliminary calculation of required hydromodification area is approximately 10,000 square feet.

A storm drain from the water quality basin would convey runoff discharge to the existing 96-inch-diameter storm drain dissipater southwesterly of the site. Runoff from the substation would then enter Salt Creek.

A Water Quality Technical Report would be prepared for the Proposed Project in accordance with Chula Vista's SUSMP and would address all site, source, and treatment control BMPs for the Proposed Project, as well as any long-term maintenance activities that are required.

The proposed grading and drainage modifications are not anticipated to result in impacts in the form of increased on- or off-site erosion or siltation. As such, impacts would be less than significant.

Question 4.9d – Drainage Patterns – Runoff/Flooding

Construction – Less-than-Significant Impact

Salt Creek Substation

As discussed in the response to Question 4.7c – Drainage Patterns – Erosion/Siltation, above, construction-related activities would result in alterations to the existing drainage patterns on the proposed Salt Creek Substation site. Existing on-site vegetation would be removed during grading activities and soils would be disturbed, making the site more susceptible to erosion caused by wind or water. Storm water run-on and runoff have the potential to change on-site drainage patterns.

With implementation of SDG&E's SWPPP and BMP Manual, including installation of silt fences, fiber rolls, and gravel bags, the potential for the Proposed Project to change drainage patterns as a result of erosion would be less than significant. Incorporation of these and other BMPs outlined in the BMP Manual would ensure that impacts would be less than significant.

TL 6965 and TL 6910 Loop-In, Existing Substation Modifications, and Staging Yards

As discussed in the response to Question 4.7c – Drainage Patterns – Erosion/Siltation, above, construction-related activities would not result in alterations to the existing drainage patterns for TL 6965 and the TL 6910 loop-in, the Existing Substation, or staging yards. Existing drainage patterns would not be substantially changed with the proposed modifications. As such, the potential for increased runoff and flooding to occur during construction as the result of these components of the Proposed Project is considered minimal. Impacts on runoff and flooding would be less than significant with implementation of SDG&E's linear SWPPP and BMP Manual. Therefore, impacts would be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Once construction of the proposed Salt Creek Substation is complete, no additional changes to on-site or off-site drainage patterns are anticipated. A water quality and hydromodification basin is planned in the southwest corner of the proposed Salt Creek Substation. The water quality basin would be designed to meet volume, area, depth, and detention time objectives of the San Diego RWQCB and Chula Vista. A storm drain from the water quality basin would convey runoff discharge to the existing 96-inch-diameter storm drain dissipater southwesterly of the site. Runoff from the substation would then enter Salt Creek. As such, the Proposed Project would not result in the potential for increased runoff volumes, and storm water facilities in the surrounding area would not be further affected. Therefore, impacts would be less than significant.

Question 4.9e – Storm Water Runoff

Construction – Less-than-Significant Impact

Salt Creek Substation

Grading activities for the Proposed Project would be required at the proposed Salt Creek Substation site to accommodate the proposed layout. The total disturbed area needed for construction of the proposed Salt Creek Substation is approximately 11.6 acres.

Existing on-site vegetation would be removed during grading activities and soils would be disturbed, making the site more susceptible to erosion caused by wind or water and increased storm water runoff. Storm water run-on and runoff have the potential to transport soil particles and deleterious material from bare soils and deposit them in nearby waterways. Sediment can result in increased turbidity in waterways, impair riparian habitat, restrict recreational uses, and cause the transport of other pollutants.

With implementation of SDG&E's SWPPP and BMP Manual, including installation of silt fences, fiber rolls, and gravel bags, the potential for the Proposed Project to increase storm water runoff or to impact water quality as a result of erosion and sedimentation would be less than significant. Peak storm water runoff would be reduced through use of fiber rolls or gravel bag berms. Sediment would be prevented from entering the storm drain system through use of gravel bag berms, and tracking controls would be used to minimize construction traffic tracking dirt onto adjacent roadways. With these BMPs and others in the BMP Manual, impacts would be less than significant.

New sources of pollutants generated during the construction phase may potentially be released into off-site water bodies by storm water. Potential sources of pollutants may include hazardous materials such as diesel fuel, hydraulic fluid, oil, and grease, as well as construction materials, sediment, and trash. Standard BMPs would be implemented to ensure that such pollutants or sediment are not carried to on-site or off-site water bodies via storm water. The Proposed Project would not violate any water quality standards or waste discharge requirements, and the proposed modifications would not significantly impede or redirect storm water runoff flows. Construction of new structures and the access roads, construction of the

proposed Salt Creek Substation, and associated clearing and grading would not significantly alter existing drainage patterns or result in substantial runoff from the site. By implementing SDG&E's SWPPP and BMP Manual, the potential for hydrologic or water quality impacts as a result of storm water runoff would be less than significant.

TL 6965 and TL 6910 Loop-In, Existing Substation Modifications, and Staging Yards

Ground disturbance for the proposed underground duct bank, above-ground power lines, Existing Substation modifications, and staging yards would occur from operation of construction vehicles, trenching, and other construction activities. All drilling/construction work for foundations, trenching work, pole holes, work pads, pole access, or other soil disturbance associated with TL 6965 and the TL 6910 loop-in would occur on land that is either already owned by SDG&E or within existing SDG&E easements, except for work in Hunte Parkway (for distribution work and curb cut improvement). Proposed modifications would not create conditions that would cause an increase in storm water runoff that enters the local storm water system over that of pre-construction rates. Implementation of SDG&E's BMP Manual would reduce potential erosion and sedimentation through such measures as street sweeping, soil stabilization measures, and installing silt fences. Implementing SDG&E's linear SWPPP and BMP Manual would ensure that potential impacts for polluted runoff would be less than significant.

Operation and Maintenance – Less-than-Significant Impact

The proposed Salt Creek Substation site consists of 11.6 acres of undeveloped land. Approximately 75,000 square feet of impervious area is planned for the proposed Salt Creek Substation. The increase compared to existing conditions of impervious surface area on the site would increase storm water runoff volume.

The discharge of storm water from the new water quality basin to the existing storm drain dissipater would result in no significant change to the downstream watercourse as a result of runoff from the proposed Salt Creek Substation site. The water quality and hydromodification basin would be designed to allow the storm water to be released at a similar rate as water currently flowing off the site.

The water quality basin would be designed to connect to the existing storm water dissipater that currently services the site. No significant impacts to existing storm water conveyance systems are anticipated with operation and maintenance of the proposed Salt Creek Substation, and no significant alteration of existing off-site drainage facilities such as culverts, catch basins, or drainage basins would be required to support long-term operation and maintenance of the proposed Salt Creek Substation.

A Water Quality Technical Report would be prepared for the Proposed Project in accordance with Chula Vista's SUSMP. It would address all site, source, and treatment control BMPs for the Proposed Project, as well as any long-term maintenance activities that would be required.

In addition, maintenance activities would have the potential to increase the presence of pollutants on-site. Fertilizers or other soil additives may potentially be applied to the ground surface to enhance and maintain landscaping materials. Such substances would be applied on-

site consistent with manufacturer's recommendations or specifications, and are not anticipated to be transported into any off-site waterways by means of storm water runoff. Materials and/or equipment used for maintenance would be used at the site on an as-needed basis and stored at off-site SDG&E maintenance facilities, as appropriate, to reduce the potential for introduction of new or increased pollutants on the property. In addition, standard measures to control and dispose of any potential pollutants that may be used during maintenance activities would be implemented in accordance with federal and state regulations. SDG&E would implement standard practices to reduce the potential for pollutants to leave the site and enter any off-site waterways. By constructing the water quality basin, implementing manufacturer's recommendations or specifications for use of fertilizers or soil additives, and implementing standard BMPs to reduce the potential for pollutants to leave the site and enter any off-site waterways, the potential for hydrologic and water quality impacts as a result of storm water runoff from the proposed Salt Creek Substation site would be less than significant.

Question 4.9f – Water Quality Degradation – Less-than-Significant Impact

The potential for the Proposed Project to result in water quality degradation as the result of Proposed Project construction or operation is also discussed in the responses to Question 4.7a – Water Quality Standards and Waste Discharge Violations, and Question 4.7e – Storm Water Runoff. Other potential pollutants are not anticipated to result in a degradation of surface water or groundwater quality as a result of Proposed Project implementation. Therefore, impacts would be less than significant.

No existing water quality conditions would be adversely affected. The majority of water used at the site would be for landscape irrigation provided by Otay Water District's reclaimed or potable water system, as available. A limited amount of water would be used for fire protection and other general operational uses.

Shallow groundwater is not expected to be encountered during excavation or installation of underground facilities. (See discussion in Question 4.9b.) However, where localized shallow groundwater is encountered, dewatering systems, as outlined in SDG&E's BMP Manual, may be installed in trenches and excavations, as appropriate, to allow construction under dry conditions. Dewatering activities may have localized effects on groundwater levels. However, the effects would be temporary and are not expected to affect any area wells. Therefore, impacts on groundwater recharge during construction would be less than significant. Any short-term construction dewatering operations would comply with San Diego RWQCB permit requirements.

Question 4.9g – Housing in Flood Hazard Areas – No Impact

No housing would be constructed as part of the Proposed Project, and no housing would be placed within a 100-year flood hazard area. Therefore, no impact would occur.

Question 4.9h – Structures in Flood Hazard Areas

Construction – No Impact

Because no impacts are anticipated, the discussion of structures in flood hazard areas is not part of Proposed Project effects. According to a FEMA FIRM (FEMA 2012), the proposed Salt Creek Substation site, power line route, Existing Substation improvements, and staging yards are in FEMA Zone X and considered to be outside of FEMA designated 100-year and 500-year flood hazard zones.

No new structures would be constructed that would impede or redirect flood flow within a 100-year flood hazard area at the proposed Salt Creek Substation site or along the power line route. As a result, the Proposed Project would not impact flood flows. Therefore, no impact would occur.

Operation and Maintenance – No Impact

Impacts during the operation and maintenance phase would be identical to the construction phase with regard to placing structures within flood hazard areas. None of the operation and maintenance activities required for the Proposed Project would cause flooding, impede flood flows, or be adversely affected by flooding. Therefore, no impact would occur.

Question 4.9i – Flood Exposure – No Impact

Because no impacts are anticipated, the discussion of structures in flood hazard areas is not part of Proposed Project effects.

Based on the review of watershed maps, the proposed Salt Creek Substation site, power line route, Existing Substation, and staging yards would not be located downstream of a dam or within a dam inundation area. The potential for risk, loss, injury, or death from installation of new structures and modifications to existing structures within dam inundation areas is minimal with the Proposed Project.

Based on the document review and Proposed Project reconnaissance, the potential for flooding to occur is considered low. The Proposed Project is in FEMA Zone X and would not involve construction of structures in a FEMA designated 100-year or 500-year flood hazard zone.

After construction is complete, the Proposed Project would not 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 a dam. Not only is the Proposed Project not in a flood hazard area, but the Proposed Project would not be routinely staffed. As a result, no impact would occur.

Question 4.9j – Seiche, Tsunami, and Mudflow – Less-than-Significant Impact

Because no impacts are anticipated with seiche or tsunami, the discussion of seiche and tsunami is not part of Proposed Project effects. The discussion of potential impacts from mudflow is separated below into Proposed Project components.

A seiche is an oscillation (wave) in an enclosed or semi-enclosed body of water that varies in duration, depending on the physical dimensions of the basin, from a few minutes to several

hours. Wave height also varies from several inches to several feet. A seiche is caused primarily by local changes in atmospheric pressure aided by winds, tidal currents, and occasionally earthquakes. Lower Otay Lake is approximately 1 mile southeast of the Proposed Project, and the Sweetwater Reservoir is approximately 2.2 miles northwest of the Proposed Project. Based on the Proposed Project's location and direction of the downstream topography below Lower Otay Lake and the Sweetwater Reservoir, the potential for damage due to a seiche is very low. No impacts would occur.

Tsunamis are seismic sea waves with a long wavelength compared to the ocean depth that are generated by sudden movements of the ocean bottom during submarine earthquakes, landslides, or volcanic activity. Based on the Proposed Project's inland location and site elevation, the potential for damage due to a tsunami is very low. No impacts would occur.

Because there are potential impacts anticipated with mudflows, the discussion of mudflows is separated into Proposed Project components. Debris avalanches and debris flows, which are both popularly called "mudslides," are shallow landslides, saturated with water, that travel rapidly downslope as muddy slurries. The flowing mud carries rocks, bushes, and other debris as it pours down the slopes. The most common cause of debris avalanches and debris flows is the combination of heavy rainfall, steep slopes, and loose soil. The ashy slopes left by wildfires in California are especially susceptible to mudslides during and immediately after major rainstorms (California Geological Survey 2012).

Salt Creek Substation

Several formations within the San Diego region are particularly prone to landsliding. These formations generally have high clay content and mobilize when they become saturated with water. Other factors, such as steeply dipping bedding that projects out of the face of the slope and/or the presence of fracture planes, will also increase the potential for landsliding. When disturbed due to natural activities (e.g., wildfires) or human activities (e.g., grading) and exposed to heavy precipitation, these slopes could generate mudflows (Kleinfelder 2008). No indication of deep-seated landsliding was noted at the proposed Salt Creek Substation site during field exploration or review of available geological literature, topographic maps, and stereoscopic aerial photographs (Kleinfelder 2008). The Kleinfelder geotechnical report concluded that the potential for landsliding is low (Kleinfelder 2008).

Slopes disturbed for the proposed Salt Creek Substation would be revegetated with landscaping and undisturbed slopes would remain vegetated. Wildfire potential would be reduced by existing development or measures to stabilize/revegetate slopes if a wildfire occurs (see Section 4.8.3.2). Therefore, the potential for a mudflow event is considered low. Impacts would be less than significant.

TL 6965 and TL 6910 Loop-In, Existing Substation Modifications, and Staging Yards

Sedimentary deposits associated with the Otay Formation that are mapped within the Proposed Project area are considered prone to landslides (Geosyntec 2012). In addition, portions of the Existing Substation were previously identified as underlain by landslide deposits or possible past landslide occurrences (URS 2011). Other nearby landslides are mapped west of

the proposed alignment. When disturbed due to natural (e.g., wildfires) or human (e.g., grading) activities and exposed to heavy precipitation, these unstable slopes could generate mudflows. Geosyntec's review of the available geologic maps and aerial photographs did not identify evidence of past landslides beneath the Proposed Project area. Given this review, the risk of slope movement associated with landslides at the proposed pole locations is considered to be low (Geosyntec 2012).

Minimal to no soil disturbance of existing slopes would occur for construction of TL 6965 and the TL 6910 loop-in, Existing Substation modifications, and staging yards. As a result, mudflow impacts from TL 6965 and the TL 6910 loop-in, Existing Substation modifications, and staging yards would be less than significant.

4.9.5 Project Design Features and Ordinary Construction/Operations Restrictions

With implementation of the ordinary construction restrictions as outlined within Section 3.8, Project Design Features and Ordinary Construction/Operations Restrictions, potential impacts related to hydrology and water quality would be less than significant.

4.9.6 Applicant-Proposed Measures

The Proposed Project's impacts on hydrology and water quality would be less than significant. Therefore, no APMs are required or proposed.

4.9.7 Detailed Discussion of Significant Impacts

Based on the above analyses, no significant impacts have been identified for the Proposed Project. No APMs are required or proposed.

4.9.8 References

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