

### 4.9 HYDROLOGY AND WATER QUALITY

#### 4.9.1 Environmental Setting

##### Regional Setting

The project area is located in the South Coast Hydrologic Region, within the jurisdiction of SDRWQCB. The SDRWQCB has jurisdiction over an approximately 3,900-square-mile area within southwest California. The San Diego region encompasses the majority of San Diego County, as well as the southwest portions of Riverside County and Orange County. The region has 13 major stream systems that originate in the western uplands and flow westward to the Pacific Ocean. Most of the streams have perennial and ephemeral segments due to the seasonal nature of rainfall and the relatively low amount of yearly rainfall, or due to effects from dams or other manmade blockages.

The majority of the project area is within the Otay Valley Hydrologic Unit defined in the SDRWQCB Water Quality Control Plan for the San Diego Basin (Basin Plan) (SDRWQCB 2011); the major stream system traversing the unit is the Otay River and its tributaries. The Otay Valley Hydrologic Unit receives up to 19 inches of precipitation annually, with the amount generally increasing eastward.

The northernmost portion of the project area is within the Lower Sweetwater Hydrologic Unit, which drains westward to San Diego Bay. The Sweetwater Hydrologic Unit receives up to 13 inches of precipitation annually (SDRWQCB 2011).

Natural drainage patterns within the region have been modified to minimize the risk of flooding in urbanized areas. Stormwater within Chula Vista generally is conveyed into Chula Vista's municipal separate stormwater system (MS4), which consists of modified natural drainages and built drainages. The Chula Vista MS4 conveys water into rivers, reservoirs, bays, and the Pacific Ocean.

##### Surface Water Bodies

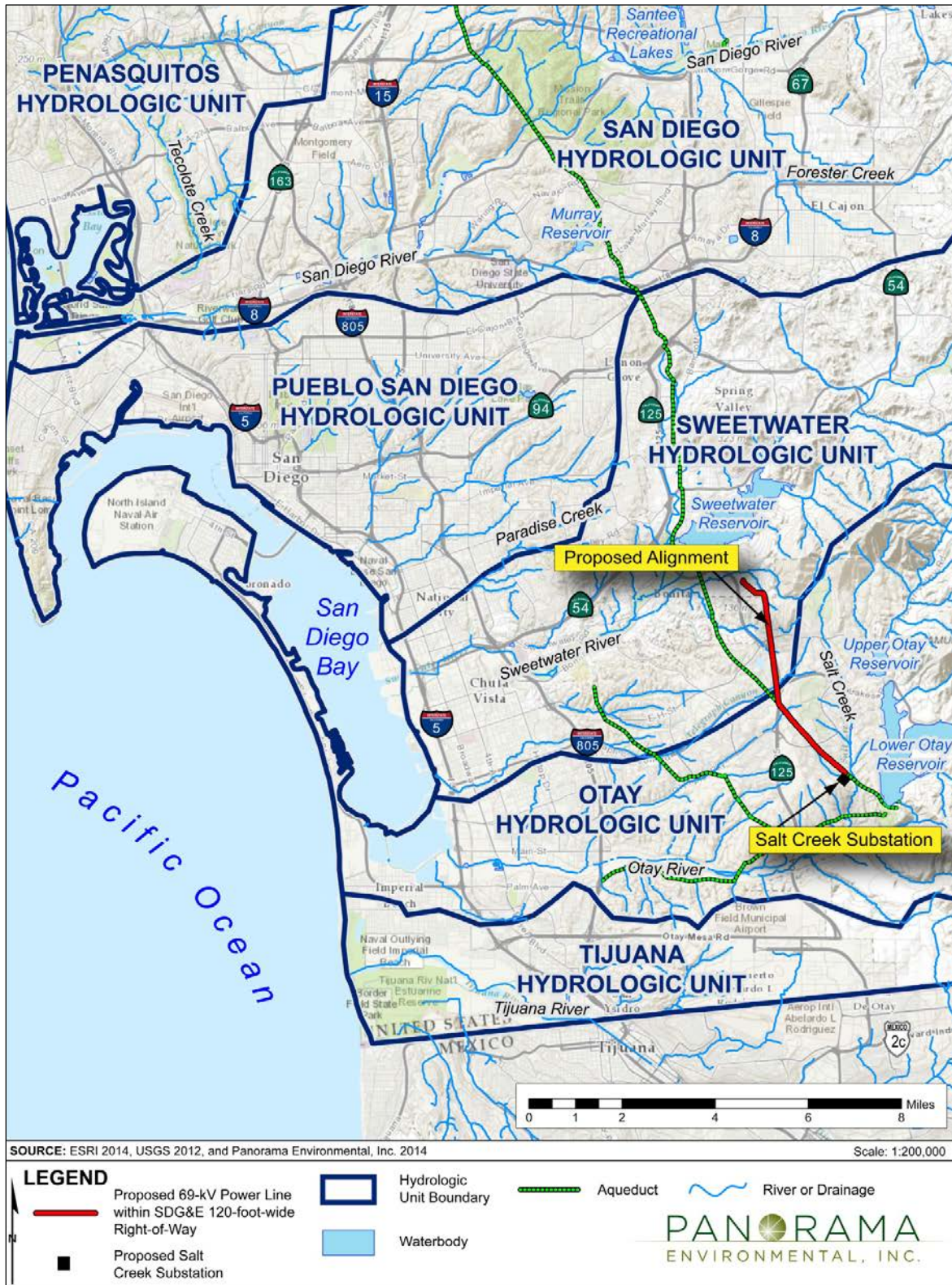
##### Drainages, Creeks, and Streams

The project area is located within two watersheds. The southern portion of the project area is located in the 160-square-mile Otay watershed, within which the Otay River is the major drainage feature. The northern portion of the project area is located in the 230-square-mile Sweetwater watershed, within which the Sweetwater River is the major drainage feature. The Otay and Sweetwater watersheds are shown on Figure 4.9-1. Creeks and streams in the project area are shown on Figure 4.9-2.

Drainage for the project area generally flows south or southwest into the Otay River and westward to San Diego Bay. Most of the project area is within the Salt Creek and Poggi Canyon Creek watersheds, which are tributaries of the Otay River, and the Telegraph Canyon Creek watershed, which is a tributary of the Sweetwater River.

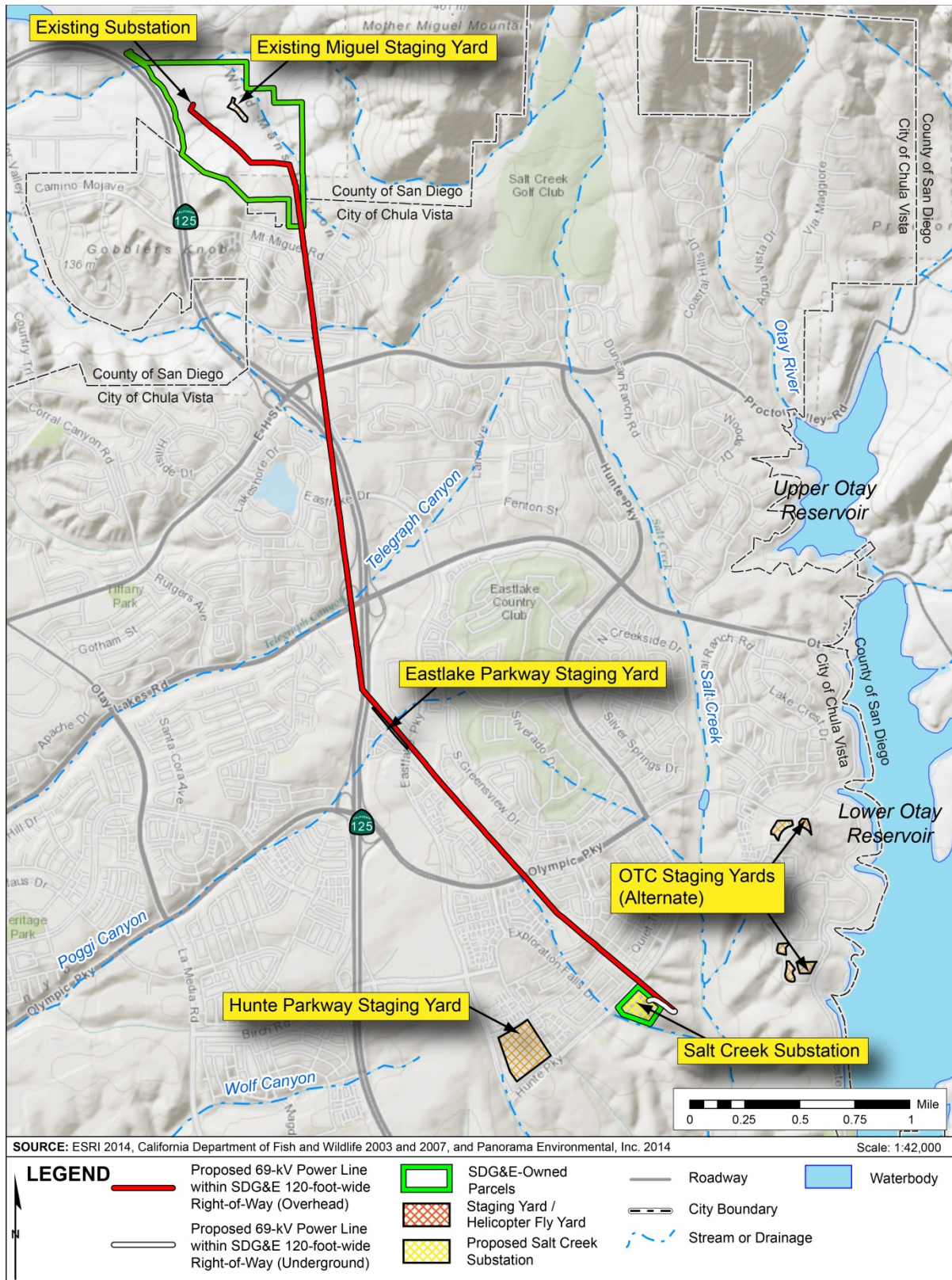
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Figure 4.9-1 Project Region Watersheds



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**Figure 4.9-2 Surface Waters in the Project Area**



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Runoff from the proposed substation site drains in two directions via existing concrete brow ditches: the west half of the site drains to the southwest and the east half of the site drains to the southeast. Both brow ditches drain to a tributary of Salt Creek. A 96-inch-diameter reinforced concrete storm drain pipe is located within canyon fill sediments west of the existing sewer access road and discharges into the drainage at the base of the slope (Kleinfelder 2008).

Telegraph Canyon Creek, Poggi Canyon Creek, and a named tributary of Sweetwater River are located within the transmission corridor (Figure 4.9-2). The Miguel Substation area drains to a tributary of the Sweetwater Reservoir.

### **Wetlands**

Natural depressions accumulate runoff and seepage during wet periods, forming intermittent drainages and seasonal wetlands. Seasonal wetlands lack a restrictive layer, such as a hardpan or claypan; therefore, the hydrologic regime of these features is dominated by periods of saturated soil conditions rather than inundation.

No wetland features are within the proposed substation or Miguel Substation sites. Wetland features within the transmission corridor were reviewed for their potential to be USACE or CDFW jurisdictional waters. Wetland delineations were conducted for the entire project area; the results of the delineations are shown on Appendix D, Figures D-1 through D-11, and are discussed further in Section 4.4: Biological Resources.

Approximately 2.15 acres of potentially jurisdictional waters were identified within the transmission corridor between SR-125 and Otay Lakes Road, west of SR-125 (AECOM 2013). The majority of the potential waters (1.93 acres) are both waters of the U.S. and waters of the state under the jurisdiction of the USACE and CDFW (respectively); 0.21 acres of potential waters are waters of the state under the jurisdiction of CDFW and SDRWQCB (AECOM 2013).

### **Reservoirs, Ponds, and Lakes**

No reservoirs, ponds, or lakes are located within the project area. Upper Otay Lake and Lower Otay Lake (also known as Upper and Lower Otay Reservoirs) are located approximately 2 miles and 1 mile east, respectively, of the closest project components. Sweetwater Reservoir is located approximately 0.6 miles north of Miguel Substation. A portion of the power line route between East H Street and Telegraph Canyon Road is approximately 800 feet east of East Lake, an isolated water feature that is surrounded by residential development and is not fed by a drainage-way. Reservoirs and lakes in the project vicinity are shown on Figure 4.9-2.

### **Flooding Potential and Dam Failure Inundation Areas**

A Special Flood Hazard Area (SFHA), as defined by the Federal Emergency Management Agency (FEMA), is an area of land that has a 1 percent chance of being inundated by a flood during any given year. An SFHA is also referred to as a 100-year flood zone. The project area does not intersect or span any SFHAs (FEMA 2012). The proposed project area is entirely located within FEMA Zone X, which is subject to minimal flood risks. The SFHA closest to the transmission corridor is at the intersection of SR-125 and Otay Lakes Road, where the corridor is within approximately 100 feet of the Telegraph Canyon Creek flood zone, in a relatively low-

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relief area. The SFHAs for Salt Creek and the Sweetwater River also are located near the project area but do not intersect any project elements (FEMA 2012).

There are several dams located in the County regulated by the State Division of Safety of Dams (County of San Diego 2010). The dams closest to the project site are Sweetwater Dam, Upper Otay Dam, and Savage Dam (see Table 4.9-1). There are no dams or levees located within the project area. The proposed project area is not located within a dam failure inundation area (County of San Diego 2010).

**Table 4.9-1 Dams in the Project Vicinity**

Dam	Distance to Project Feature	Project Downstream?
Sweetwater Dam	1.5 miles northwest of Miguel Substation	No
Upper Otay Dam	2.1 miles east of transmission corridor	No
Savage Dam	1.3 miles southeast of the proposed substation site	No

### Tsunamis and Seiches

Tsunamis are seismically induced waves generated by sudden movements of the ocean bottom during earthquakes, landslides, or volcanic activity. The Pacific Ocean borders the County to the west. Several active and potentially active earthquake faults are located within or near the County, including offshore (e.g., Rose Canyon fault zone; see Section 4.6: Geology and Soils). An earthquake occurring offshore or as far away as Asia could result in tsunami generation that could impact the County. The project area is located approximately 11 miles from the coastline and is not located in a tsunami inundation area (County of San Diego 2010).

Seiches are wind- or earthquake-induced “standing waves” within enclosed water bodies, such as bays, lakes, or reservoirs. The project area does not include any lakes, pools, or other enclosed water bodies. A portion of the project area is located within approximately 800 feet of the east shoreline of East Lake. Miguel Substation is approximately 0.6 miles south of Sweetwater Reservoir. The proposed substation site is approximately 1 mile west of Lower Otay Lake. Movement on any of the active or potentially active faults located in the project vicinity could possibly result in the creation of a seiche on one of these standing water bodies; however, the lakes are relatively shallow and the effects, if any, would be restricted to the immediate vicinity of the shorelines, outside of the project area.

### Groundwater

#### Region

All major drainage basins in the San Diego County region contain groundwater. The groundwater basins are relatively small and generally shallow (SDRWQCB 2011). A small portion of the project area intersects the Otay Valley Groundwater Basin.

The primary water-bearing units in the Otay Valley Groundwater Basin are alluvium and the San Diego and Otay Formations, of which the San Diego Formation is the most extensive and developed (CDWR 2004). Recharge sources include precipitation percolation, stream flow

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originating in valley highlands to the east, return flow of applied water, uncommon releases from the Lower Otay Reservoir during flood conditions, underflow near dams, and discharges from municipal wastewater treatment plants. Groundwater levels vary seasonally throughout the County, with higher levels occurring during the winter rainy season and lower levels occurring during the summer. Groundwater levels also may vary due to irrigation water application and other factors.

### Proposed Project Area

Groundwater was not observed in subsurface borings or test pits excavated at the proposed substation site. Kleinfelder (2008) estimated that perched groundwater in the filled drainage west of the proposed substation site was approximately 225 to 230 feet in elevation (i.e., approximately 200 feet below ground surface [bgs]).

Perched groundwater (i.e., a saturated interval above the water table) was noted at one location within the transmission corridor, within the alluvium in boring B-5, at a depth of approximately 11 feet bgs. Boring B-5 was located west of the proposed TL 6965 alignment near the Otay Lakes/SR-125 exit ramp (Geosyntec 2012).

### Water Quality

Urban, rural, industrial, commercial, and agricultural runoff impacts water quality in the County. The major pollutants are sediment, nutrients, and pathogens (e.g., *E. coli*). Section 303(d) of the 1972 federal CWA requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial uses. Each state must submit a list, called the 303(d) list, to the EPA every 2 years. Details on 303(d) listing are provided in Section 4.9.2. Section 303(d)-listed water bodies in the project area and pollutants are summarized in Table 4.9-2.

Groundwater quality in the project region is characterized by high total dissolved solids (TDS) concentrations, with TDS concentrations decreasing with distance from the coastal plain (i.e., eastward) (CDWR 2004). Groundwater is rated marginal to inferior for domestic use in the coastal plain because of high TDS content and is rated as suitable in the eastern part of the Otay Valley groundwater basin.

### 4.9.2 Regulatory Setting

#### Federal

#### Environmental Protection Agency

**Clean Water Act.** The CWA was enacted in 1972 to regulate the discharge of pollutants to waters of the United States. The CWA requires a permit to discharge from any point source to waters of the U.S. Water resources, including wetlands, occurring within the project area are potentially subject to federal jurisdiction under Sections 401 and 404 of the CWA. Amendments to the CWA in 1987 added Section 402(p), which established a framework to regulate non-point source stormwater discharges under the NPDES stormwater program, described below.

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**Table 4.9-2 Impaired (Section 303(d)-listed) Water Bodies in the Project Area**

Water Body	Approximate Distance from Project (miles)	Pollutant	Proposed Total Maximum Daily Load (TMDL) Completion Date
Sweetwater Reservoir	0.6	Dissolved oxygen	2019
Lower Otay Lake	1.0	Ammonia	2019
		Iron	2019
		Manganese	2019
		Nitrogen	2021
		High pH <sup>1</sup>	2019
Telegraph Canyon Creek	0.0 (Spanned by transmission line)	Selenium	2021
Poggi Canyon Creek	0.0 (Spanned by transmission line)	Toxicity	2021
		DDT <sup>2</sup>	Delisted <sup>3</sup>

Notes:

<sup>1</sup> pH = Measurement of acidity and/or alkalinity. A high pH corresponds to an alkaline solution.

<sup>2</sup> DDT = dichlorodiphenyltrichloroethane.

<sup>3</sup> DDT has been recommended to be delisted from the 303(d) list.

Source: SWRCB 2010

**Drinking Water Standards.** The National Primary Drinking Water Regulations maximum contaminant levels (MCLs) are derived from regulations set forth by EPA. The regulations are enforceable federal standards for public water systems. Secondary MCLs are derived from the National Secondary Drinking Water Regulations (NSDWR) and are not enforceable, but EPA recommends adherence to secondary standards. NSDWR act as a guideline to avoid contaminants that potentially lead to cosmetic or aesthetic effects.

### Federal Emergency Management Agency

**National Flood Insurance Act.** The National Flood Insurance Act (1968) provides federally subsidized flood insurance to owners of flood-prone properties. FEMA developed Flood Insurance Rate Maps to facilitate identifying areas with flood potential; these maps can also be used for planning purposes. Federal regulations governing development in a 100-year floodplain are set forth in CFR Title 44, Part 60, enabling FEMA to require municipalities that participate in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

### State

#### State Water Resources Control Board

**Porter-Cologne Water Quality Control Act.** The SWRCB administers the Porter-Cologne Water Quality Control Act and Section 401 of the CWA. The Porter-Cologne Water Quality Control Act, Water Code Section 13260, requires that “any person discharging waste, or proposing to discharge waste, within any region that could affect the ‘waters of the State’ file a report of

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discharge” with the appropriate Regional Water Quality Control Board. Waters of the State, as defined in the Porter-Cologne Act (Water Code Section 13050(e)), are “any surface water or groundwater, including saline waters, within the boundaries of the state.”

**Section 401 of the Clean Water Act.** Pursuant to Section 401 of the CWA, SWRCB considers waters of the U.S. to include, but not be limited to, rivers, streams, lakes, bays, marshes, mudflats, unvegetated seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked bay lands, seasonal wetlands, and riparian woodlands. SWRCB has also claimed jurisdiction and exercised discretionary authority over “isolated waters” under the Porter-Cologne Act.

**Section 303(d) of the Clean Water Act.** Section 303(d) of the CWA requires states to identify water bodies that do not meet water quality objectives and are not supporting the beneficial uses of the water body. Each state must submit an updated list, called the 303(d) list, to EPA every two years. In addition to identifying the water bodies that are not supporting beneficial uses, the list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. States are required to prioritize impaired water bodies for development of TMDL levels.

**NPDES Program.** Runoff water quality is regulated by the NPDES program (established through the CWA, as described above). The objective of the NPDES program is to control and reduce pollutant discharge to water bodies.

Projects disturbing more than 1 acre of land during construction are required to file a Notice of Intent and other permit registration documents with SWRCB to be covered under the state NPDES Construction General Permit (CGP) for discharges of stormwater associated with construction. A SWPPP must be developed, submitted, and implemented for the project area covered by the CGP and include BMPs that would reduce impacts to surface water quality.

### **San Diego Regional Water Quality Control Board**

The SDRWQCB implements Section 401 of the CWA. The Basin Plan presents the beneficial uses that SDRWQCB has specifically designated for local aquifers, streams, marshes, and rivers, as well as the water quality objectives and criteria that must be met to protect these uses.

### **California Department of Fish and Wildlife**

**Section 1602 of the State Fish and Game Code.** Section 1602 of the State Fish and Game Code requires any person, governmental agency, or public utility proposing any activity that will divert or obstruct the natural flow or change the bed, channel, or bank of any river, stream, or lake or proposing to use any material from a streambed, to first notify CDFW of such activity. Based on information contained in the notification form and a possible field inspection, CDFW may propose reasonable modification in the proposed construction as would allow for the protection of fish and wildlife resources. The notification requirement generally applies to any work undertaken within the annual high water mark of a wash, stream, or lake that contains or once contained fish and wildlife, or supports riparian vegetation.



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### Local

#### **County of San Diego General Plan**

The 2011 County of San Diego General Plan establishes goals and objectives to provide guidance in the growth of the County. The following hydrology and water quality objectives were identified in the Conservation and Open Space, Land Use, and Safety Element Chapters in the County of San Diego General Plan:

- COS-3.1 Wetland Protection. Require development to preserve existing natural wetland areas and associated transitional riparian and upland buffers and retain opportunities for enhancement.
- COS-3.2 Minimize Impacts of Development. Require development projects to:
- Mitigate any unavoidable losses of wetlands, including its habitat functions and values; and
  - Protect wetlands, including vernal pools, from a variety of discharges and activities, such as dredging or adding fill material, exposure to pollutants such as nutrients, hydromodification, land and vegetation clearing, and the introduction of invasive species.
- COS-4.2 Drought-Efficient Landscaping. Require efficient irrigation systems and in new development encourage the use of native plant species and non-invasive drought tolerant/low water use plants in landscaping.
- COS-4.3 Stormwater Filtration. Maximize stormwater filtration and/or infiltration in areas that are not subject to high groundwater by maximizing the natural drainage patterns and the retention of natural vegetation and other pervious surfaces. This policy shall not apply in areas with high groundwater, where raising the water table could cause septic system failures, moisture damage to building slabs, and/or other problems.
- COS-5.2 Impervious Surfaces. Require development to minimize the use of directly connected impervious surfaces and to retain stormwater runoff caused from the development footprint at or near the site of generation.
- COS-5.3 Downslope Protection. Require development to be appropriately sited and to incorporate measures to retain natural flow regimes, thereby protecting downslope areas from erosion, capturing runoff to adequately allow for filtration and/or infiltration, and protecting downstream biological resources.
- COS-5.4 Invasive Species. Encourage the removal of invasive species to restore natural drainage systems, habitats, and natural hydrologic regimes of watercourses.
- COS-5.5 Impacts of Development to Water Quality. Require development projects to avoid impacts to the water quality in local reservoirs, groundwater resources, and recharge areas, watersheds, and other local water sources.

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- LU-6.5 Sustainable Stormwater Management. Ensure that development minimizes the use of impervious surfaces and incorporates other Low Impact Development techniques as well as a combination of site design, source control, and stormwater best management practices, where applicable and consistent with the County's Low Impact Development Handbook.
- LU-6.9 Development Conformance with Topography. Require development to conform to the natural topography to limit grading; incorporate and not significantly alter the dominant physical characteristics of a site; and to utilize natural drainage and topography in conveying stormwater to the maximum extent practicable.
- S-10.4 Stormwater Management. Require development to incorporate low impact design, hydromodification management, and other measures to minimize stormwater impacts on drainage and flood control facilities.
- S-10.5 Development Site Improvements. Require development to provide necessary on- and off-site improvements to stormwater runoff and drainage facilities.
- S-10.6 Stormwater Hydrology. Ensure development avoids diverting drainages, increasing velocities, and altering flow rates to off-site areas to minimize adverse impacts to the area's existing hydrology.

### **City of Chula Vista General Plan**

The 2005 Chula Vista General Plan establishes goals and objectives to provide guidance in the growth of the City. The following hydrology and water quality objectives were identified in the Environmental Element Chapter in the City of Chula Vista General Plan:

- E 2.2 Pursue safe alternatives to traditional pest management methods in order to reduce toxics in urban runoff and large open uses of land (e.g., golf courses, parks, and agricultural lands).
- E 2.4 Ensure compliance with current federal and state water quality regulations, including the implementation of applicable NPDES requirements and the City's Pollution Prevention Policy.
- E 2.5 Encourage and facilitate construction and land development techniques that minimize water quality impacts from urban development.
- E 2.6 Maximize the protection of potable water supply resources from pollutants.

### **City of Chula Vista Development Stormwater Manual**

The City of Chula Vista Development Stormwater Manual requires that applicants incorporate all necessary permanent BMPs into project plans prior to submittal to the City, regardless of project type. In addition, projects subject to SUSMP requirements must prepare and submit a Water Quality Technical Report (WQTR). The WQTR must include:

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- General project information (location, description, physical features, land disturbance areas, narrative of project activities, vicinity map, surrounding land use and proposed project land use, soil erosion potential, site slope, watersheds containing the project site, existing natural drainages or habitat to be preserved, sensitivity of receiving water bodies, proximity to receiving water bodies, and anticipated non-stormwater discharges)
- Pollutants and conditions of concern
- Proposed BMPs
- Maintenance plan
- BMP plan
- Geotechnical/soils studies
- Hydrology studies

The WQTR describes how the project drainage will comply with the SUSMP requirements. City of Chula Vista SUSMP requirements must be incorporated into the project design and be shown on the plans prior to approval of permits.

### 4.9.3 Applicant Proposed Measures

SDG&E proposes to implement measures that would reduce environmental impacts. The following relevant APMs are considered part of the proposed project (Table 4.9-3). The significance of the impact, however, is first considered prior to application of the APM and a significance determination is made. The implementation of the APM is then considered as part of the project when determining whether impacts would be significant and thus would require mitigation. These APMs would be incorporated as part of any CPUC approval of the project, and SDG&E would be required to adhere to the APMs as well as any identified mitigation measures. The APMs are included in the Mitigation Monitoring and Reporting Plan for the project (refer to Section 9: Mitigation Monitoring and Report Plan in this Draft EIR), and the implementation of the measures would be monitored and documented in the same manner as mitigation measures.

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**Table 4.9-3 Applicant Proposed Measures for Hydrology and Water Quality Impacts**

APM Number	Requirements
<b>APM HYDRO-1: Stormwater Pollution Prevention Plan</b>	<p>SDG&amp;E will obtain coverage for the project under the Construction General Permit (Order No. 2009-0009-DWQ, <a href="#">as amended by 2010-0014-DWQ and 2012-0006-DWQ</a>), which requires submittal of Permit Registration Documents (PRDs) to the State Water Resources Control Board. The PRDs include a Stormwater Pollution Prevention Plan (SWPPP), which will include the following:</p> <ul style="list-style-type: none"> <li>• Identification of pollutant sources and non-stormwater discharges associated with construction activity.</li> <li>• Specifications for erosion control best management practices (BMPs) that would be implemented, inspected, and maintained during construction of the project 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.</li> <li>• Procedures for spill response and implementation.</li> <li>• Personnel training procedures for protocols included in the SWPPP.</li> <li>• Requirements for reporting and recordkeeping.</li> <li>• Procedures for water sampling and analysis of pollutants to ensure that Numeric Action Levels and Numeric Effluent Limitations are not exceeded.</li> </ul>
<b>APM HYDRO-2: Stormwater Management Plan</b>	<p>SDG&amp;E will prepare and implement a Stormwater Management Plan that addresses post-construction drainage and water quality impacts (in tandem with the site design) in accordance with the City of Chula Vista's Standard Urban Stormwater Mitigation Plan (SUSMP) to comply with the Regional Municipal Separate Stormwater Sewer System (MS4) Permit (i.e., Clean Water Act Section 403, NPDES Permit). Any long-term maintenance activities required in the Water Quality Technical Report prepared for the proposed project would be in accordance with the City's SUSMP.</p>

### 4.9.4 Significance Criteria

Appendix G of the CEQA Guidelines (14 CCR 15000 *et seq.*) provides guidance on assessing whether a project will have significant impacts on the environment. Consistent with Appendix G, the proposed project would have a significant impact on hydrology and water quality if it would:

- 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 (e.g., the production rate of existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
- 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.

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- e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- f. Otherwise substantially degrade water quality.
- 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.
- h. Place within a 100-year flood hazard area structures that 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.
- j. Cause inundation by seiche, tsunami, or mudflow.

### 4.9.5 Environmental Impacts and Mitigation Measures

This impact analysis considers the potential effects to hydrology and water quality from activities associated with the construction, operation, and maintenance of the proposed project.

#### Impact Assessment

Table 4.9-4 provides a summary of the significance of potential impacts to hydrology and water quality prior to application of APMs, after application of APMs and before implementation of mitigation measures, and after the implementation of mitigation measures.

**Table 4.9-4 Summary of Potential Impacts to Hydrology and Water Quality**

Significance Criteria	Project Phase	Significance Prior to APMs	Significance After APMs and Before Mitigation	Significance After Mitigation
Impact Hydro-1: Potential to violate any water quality standards or waste discharge requirements	Construction	Significant	Significant APM HAZ-1, APM HYDRO-1	Less than significant MM Hydro-1 MM Hydro-2
	Operation and Maintenance	Significant	Less than significant APM HAZ-1, APM HYDRO-2	Less than significant
Impact Hydro-2: Potential to 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	Construction	Less than significant	Less than significant	Less than significant
	Operation and Maintenance	No impact	No impact	No impact

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Significance Criteria	Project Phase	Significance Prior to APMs	Significance After APMs and Before Mitigation	Significance After Mitigation
Impact Hydro-3: Potential to 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	Construction	Significant	Significant APM HYDRO-1	Less than significant MM Aesthetics-1, MM Geology-1, MM Hydro-3
	Operation and Maintenance	Significant	Less than significant APM HYDRO-2	Less than significant MM Aesthetics-1, MM Hydro-3
Impact Hydro-4: Potential to 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	Construction	Less than significant	Less than significant	Less than significant
	Operation and Maintenance	Less than significant	Less than significant	Less than significant
Impact Hydro-5: Potential to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or otherwise degrade water quality	Construction	Significant	Significant APM HAZ-1, APM HAZ-2, APM HYDRO-1	Less than significant MM Hydro-3
	Operation and Maintenance	Significant	Significant	Less than significant MM Hydro-3
Impact Hydro-6: Potential to 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	Construction	No impact	No impact	No impact
	Operation and Maintenance	No impact	No impact	No impact
Impact Hydro-7: Potential to locate structures that would impede or redirect flood flows within a 100-year flood hazard area	Construction	No impact	No impact	No impact
	Operation and Maintenance	No impact	No impact	No impact
Impact Hydro-8: Potential to 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	Construction	No impact	No impact	No impact
	Operation and Maintenance	No impact	No impact	No impact

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Significance Criteria	Project Phase	Significance Prior to APMs	Significance After APMs and Before Mitigation	Significance After Mitigation
Impact Hydro-9: Potential to cause inundation by seiche, tsunami, or mudflow	Construction	No impact	No impact	No impact
	Operation and Maintenance	No impact	No impact	No impact

### Impact Hydro-1: Potential to violate any water quality standards or waste discharge requirements (*Less than significant with mitigation*)

#### Construction

Construction activities would involve the use of heavy machines and equipment that use petroleum products, hydraulic oil, and other hazardous chemicals. Discharge of these materials to drainages, surface waters, or wetlands would be a significant impact if the polluted runoff violated any water quality standards. Construction activities such as vegetation clearing, grading, and excavation have the potential to increase erosion, which could increase the amount of soil or sediment in runoff water. The discharge of soil or sediment would be a significant impact if the sediment in runoff water exceeded water quality standards. Construction activities include crossings of waters of the state to access work areas and discharge of groundwater if encountered in excavations. These activities could potentially violate waste discharge requirements.

Recycled water would be provided by Otay Water District if recycled water is available during the construction period. SDG&E would use the San Diego Regional Water Quality Control Board (RWQCB) waiver number 2 for low-threat discharges to land. Existing recycled water delivery (purple pipe) is located in the vicinity of the planned Salt Creek substation on Hunte Parkway. SDG&E would work with Otay Water District to establish a secure meter for recycled water supply during project construction. In addition, SDG&E will work with Otay Water District to supply the substation with firefighting and landscape irrigation water through purple pipe. The existing SDG&E Miguel Substation is currently supplied with recycled water from Otay Water District for firefighting. Recycled water at the Miguel Substation would be used for construction water as well. All project application areas are permitted under the Ralph W. Chapman Water Recycling Facility Waste Discharge Requirements (WDR's).

Water used for construction of the project including potable and/or recycled water would be discharged to land in a manner consistent with applicable Waste Discharge Requirements (WDRs) issued by the RWQCB. In addition, consistent with the RWQCB Waiver Number 2, recycled water would not be discharged to Waters of the U.S., Waters of the State or any part of the Municipal Separate Storm Sewer System (MS4). Impacts from violation of waste discharge requirements would be less than significant; no mitigation is required.

#### Proposed Substation

Stormwater runoff from the substation pad would drain toward a vegetated water detention basin constructed in the southwest corner of the substation pad, outside the substation wall.

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Water would discharge from the detention basin to an existing storm drain dissipator. Substation construction would violate water quality standards and cause a significant impact if there was a discharge of hazardous materials, petroleum products, or sediment in excess of water quality standards. Substation construction would not violate any water quality standards or waste discharge requirements with implementation of APM HAZ-1 and APM HYDRO-1. APM HAZ-1 requires SDG&E to implement a [SPCCHSMER](#) plan including containment and clean-up of spills of hazardous materials. APM HYDRO-1 requires the preparation and implementation of a SWPPP. Implementation of BMPs defined in the SWPPP would reduce erosion and therefore the amount of sediment or soil contained in runoff from the site. Impacts from substation construction would be less than significant, and no mitigation is required.

Recycled water, if available, would be using during grading and construction of the proposed substation. No waste discharge requirement would be violated because the necessary SDRWQCB approval would be obtained and water would be discharged to the land in a manner consistent with all applicable waste discharge requirements; no water would be discharged to a water of the state, water of the U.S., or the MS4. Impacts would be less than significant; no mitigation is required.

### TL 6965

Portions of the proposed power line cross over Telegraph Canyon Creek, Poggi Canyon Creek, and a named tributary of Sweetwater River. Telegraph Canyon Creek has elevated levels of and is impaired for selenium, and Poggi Canyon Creek is impaired for toxicity. Ground-disturbing activities would not occur within or near these waters. APM HAZ-1 requires SDG&E to implement a [SPCCHSMER](#) Plan including containment and clean-up of hazardous material spills. The project would not contribute to downstream toxicity due to the proposed containment and clean-up of any hazardous materials. Construction of the proposed project would not contribute to selenium or toxicity levels in Telegraph Canyon Creek or Poggi Canyon Creek, respectively, nor would it affect water quality in the named tributary of Sweetwater River. The power line construction would not cause sediment release in excess of a water quality standard due to the limited amount of earth disturbance involved in the power line construction and the isolated nature of the work areas. The impact from sediment to water quality would be less than significant. While less than significant, APM HYDRO-1 would further reduce the impact through implementation of sediment control BMPs. Impacts from sedimentation or hazardous material discharges would be less than significant, and no mitigation is required.

The project may involve dewatering if shallow groundwater is encountered during excavation. SDG&E may also construct temporary bridges over drainages if water or saturated soils are present within the drainage during construction (e.g., after rain). The discharge of water during dewatering and the drainage crossings could result in violation of SDRWQCB waste discharge requirements and a significant impact if the pumped groundwater was discharged to a water of the state or U.S. or the temporary drainage crossings result in unauthorized discharge of fill materials to waters of the U.S. Mitigation Measure Hydro-1 would reduce impacts from drainage crossings by applying seasonal restrictions to the drainage crossings and requiring



## 4.9 HYDROLOGY AND WATER QUALITY

agency approval (i.e., 401 water quality certification) prior to implementation of temporary bridges outside of the seasonal restrictions. SDG&E would implement all conditions of the waiver of waste discharge requirements with Mitigation Measure Hydro-1. These conditions may include avoidance and minimization measures as well as compensatory mitigation for impacts to waters of the state. Mitigation Measure Hydro-2 requires that any dewatering be pumped to uplands to avoid discharge to a water of the state or U.S. No waste discharge requirement would be violated because the necessary SDRWQCB approval would be obtained prior to discharge of any materials within a water of the U.S., and groundwater would not be discharged to a water of the state or U.S. Impacts would be less than significant with mitigation.

Recycled water, if available, would be using during excavation and pole installation. No waste discharge requirement would be violated because the necessary SDRWQCB approval would be obtained and water would be discharged to the land in a manner consistent with all applicable waste discharge requirements; no water would be discharged to a water of the state, water of the U.S., or the MS4. Impacts would be less than significant; no mitigation is required.

### Operation and Maintenance

Operation and maintenance activities would involve use of existing access routes and would not involve any new ground disturbance that could result in substantial erosion or sedimentation or that could affect water quality in the project area. No dewatering would be required during operation and maintenance. The temporary crossing of waters of the state or U.S. for inspections or maintenance would not cause a discharge of fill materials due to the infrequency and limited scope of any maintenance work.

The substation transformers would contain approximately 5,500 gallons of oil. A release of oil from the transformers due to an upset or accident condition (e.g., earthquake or operator error) would be a significant impact. SDG&E would construct an oil containment basin capable of holding oil from the transformers on the site as part of the project and required in the SPCC Plan (APM HAZ-1). APM HYDRO-2 would be implemented as part of the project and would require preparation and adherence to a Stormwater Management Plan to minimize post-construction impacts to water quality. The potential risk of contamination from the release of chemicals from equipment during operation and maintenance activities at the substation would be less than significant with use of the oil containment basin specified in APM HAZ-1. Impacts to water quality standards or waste discharge requirements would be less than significant, and no mitigation is required.

Recycled water, if available, would be used to irrigate landscaping for five years post-construction. Use of recycled water would not violate waste discharge requirement because the necessary SDRWQCB approval would be obtained and water would be discharged to the land in a manner consistent with all applicable waste discharge requirements; no water would be discharged to a water of the state, water of the U.S., or the MS4. Impacts would be less than significant; no mitigation is required.

## 4.9 HYDROLOGY AND WATER QUALITY

### Mitigation Measures: Hydro-1 and Hydro-2

**Mitigation Measure Hydro-1:** Overland crossings of drainages with vehicles and heavy equipment shall be conducted when the drainage is dry, as determined by the aquatic resource monitor. After each rain event, drainage crossings shall be evaluated for surface flows and ponding by the aquatic resource monitor to determine if a dry-out period (i.e., avoidance of the crossing) is required to avoid impacts to the drainage during the dry season (June 1 to October 15) or a temporary bridge shall be installed across the drainage. If it becomes necessary to place a temporary bridge over a jurisdictional drainage during construction, the bridge should be placed over the drainage spanning the channel from bank to bank and avoiding the Ordinary High Water Mark (OHWM) to the extent feasible. An aquatic resource monitor shall be present to provide guidance to the work crew during placement and removal of the bridge to avoid substantial impacts to the drainage. SDG&E shall consult with USACE, SDRWQCB, and CDFW and obtain any required permits or approvals prior to constructing a temporary bridge over any state or federally jurisdictional drainage. ~~Waters of the U.S. and State shall be avoided during installation of the temporary bridge.~~ SDG&E shall implement restoration and/or compensatory mitigation for temporary and permanent impacts to federally jurisdictional drainages associated with temporary bridge construction and use, if impacts to waters cannot be avoided.

**Mitigation Measure Hydro-2:** Groundwater extracted during construction dewatering shall not be discharged to surface waters or storm drains. If dewatering is necessary, the water would either be directed to relatively flat upland areas for evaporation and infiltration back to the water table, used for dust control, used to irrigate upland areas, or used as makeup for a construction process (e.g., concrete production). If extracted groundwater is found not to be clean, clear, and odor-free, it shall be disposed of at an appropriate designated facility.

Significance after Mitigation: Less than significant.

Impact Hydro-2: Potential to 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 (*Less than significant; no mitigation required*)

#### Construction

Water would be required for dust control (as specified in APM AIR-1), soil compaction at the substation, and also may be required to keep sandy soils firm during augering of pole holes. Approximately 100.5 acre-feet (31,980,000 gallons or 60,000 gallons per day) of water would be used during the 18- to 24-month construction period. SDG&E would obtain water from the Otay Water District, which generates approximately 1 million gallons per day (mgd) of recycled water and purchases an additional 6 mgd of recycled water. The water required for project construction would not be obtained from groundwater supplies and, therefore, would not deplete groundwater supplies or lower the groundwater table. There would be no impact to groundwater supplies.

## 4.9 HYDROLOGY AND WATER QUALITY

Perched groundwater may be encountered during substation foundation excavation (Geosyntec 2012). The likelihood of encountering perched groundwater is low because excavation would only occur to approximately 40 feet bgs and groundwater is expected to occur within the proposed substation site at approximately 200 feet bgs. Perched groundwater was encountered within the transmission corridor at 11 feet, within the 30-foot depth of the proposed TL 6965 foundation excavations. In the event that perched groundwater is encountered during excavation, dewatering would be required. The potential volume of perched groundwater that may be encountered during foundation excavation would be limited because the depth of the excavation is well above the groundwater table. Dewatering would not substantially deplete groundwater supplies and would not cause a significant impact because the total depth of excavations is above the groundwater table, and the volume of potential groundwater discharge would be minimal. Impacts would be less than significant, and no mitigation is required.

Approximately 172,500 square feet (3.96 acres) of impervious surface would be created at the substation site. The new steel poles for TL 6965 would create approximately 0.008 to 0.013 total acres of impervious surface within the transmission corridor, depending on the final diameters of pole foundations. No impervious surface would be created at the staging yards or at Miguel Substation. The maximum of 3.96 acres of new impervious surface would not significantly impact infiltration to the groundwater table. SDG&E would reduce impacts to groundwater recharge by constructing a groundwater detention basin at the substation site. Runoff from the substation would flow to the detention basin and be discharged to the local drainage. Groundwater recharge and the local groundwater table would not be substantially affected. Impacts would be less than significant, and no mitigation is required.

### Operation and Maintenance

Operation and maintenance activities for the new substation and transmission line would not affect groundwater resources. Water would not be required for maintenance or dust control. No new excavations would be required and therefore no groundwater dewatering would be needed. There would be no impact.

Approximately 1.2 acre-feet (388,960 gallons) of water per year would be required to irrigate landscaping around the new substation during the first 5 years following construction. Approximately 0.84 acre-feet (272,272 gallons) per year would be required in the ensuing years to maintain the landscaping. Recycled water would be used for landscaping irrigation. The water would be obtained from recycled sources from the Otay Water District and would not result in depletion of groundwater supplies. There would be no impact.

Maintenance activities would not expand the area of impervious surfaces. There would be no impact to groundwater supplies or the groundwater table as a result of operation or maintenance of the project.

**Mitigation Measures: None required.**

## 4.9 HYDROLOGY AND WATER QUALITY

**Impact Hydro-3: Potential to 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 (*Less than significant with mitigation*)**

### Construction

#### **Proposed Substation**

Construction of the proposed substation would require grading to construct a flat pad within a sloping parcel. The grading would involve approximately 61,600 cubic yards of cut material and approximately 83,100 cubic yards of fill. Grading of the substation site would result in steep slopes to the south and east of the substation pad and along the expanded substation access road.

The drainage pattern at the substation site would be substantially altered during grading and site preparation activities, which would result in steeper slopes and redirected flows to the west and southeast of the substation site. The substation construction would not substantially alter the course of a stream or a river because there are no streams or rivers on site. On the southwest side of the substation, the substation site drainage design would redirect the existing drainage around the fill slope to the west by approximately 100 feet. On the west side of the substation a storm drain pipe would be installed underground to direct water from the detention basin to the existing 96-inch-diameter reinforced concrete storm drain outfall. The drainage design includes storm drain outfalls, bench and terrace drains, and a water quality detention basin. Construction would ~~retain the existing brow ditches present on site~~ remove and replace portions of the existing brow ditch along the sewer access road where the road would be widened for substation access. The rebuilt portions of the brow ditch would differ from the existing brow ditch by only slight elevation and/or horizontal variations. The resultant brow ditch would have the same functionality as the existing brow ditch. The water would flow the same direction towards the discharge dissipater, ultimately leading to Salt Creek.

The change in drainage pattern at the site could result in increased erosion and siltation in the site vicinity and immediately downstream, which would be a significant impact. SDG&E has proposed APM HYDRO-1 to reduce erosion and siltation through the implementation of BMPs as directed in the site-specific SWPPP that would be prepared prior to initiating construction. APM HYDRO-1 would reduce the potential for erosion and siltation that may result due to the change in drainage pattern at the site; however, a significant impact would occur if temporarily disturbed areas were not stabilized with permanent BMPs or the proposed conceptual landscaping is not successful. Mitigation Measure Geology-1 requires permanent stabilization of disturbed surfaces. Mitigation Measure Aesthetics-1 requires preparation and implementation of a Landscaping and Irrigation Plan that would be reviewed by a geotechnical engineer for consistency with the geotechnical approach. Mitigation Measure Aesthetics-1 also specifies success criteria and monitoring for slope revegetation. Increased vegetative cover on steep slopes and permanent BMPs would reduce the potential for erosion and downstream siltation. Impacts from erosion on the substation site would be less than significant with mitigation.

## 4.9 HYDROLOGY AND WATER QUALITY

The substation design includes the addition of approximately 172,500 square feet (3.96 acres) of impervious surface. The additional impervious surfaces have the potential to increase the rate of runoff from the site by approximately 3.7 cubic feet per second in a 2-year, 24-hour storm event<sup>1</sup> (i.e., an event lasting 24 hours that has a 50 percent chance of occurring in any given year). The addition of impervious surfaces would increase the rate of surface runoff causing downstream erosion due to increased flow volumes. Increase in offsite erosion would be a significant impact.

The substation design includes a water quality detention basin to reduce the potential for erosion caused by additional impervious surfaces on site. The proposed detention basin is currently designed to contain runoff from 75,000 square feet of impervious surface (SDG&E 2013). The proposed project would result in approximately 172,500 square feet of impervious surface. The substation detention basin is inadequately sized for the amount of impervious surface that would be created by construction of the proposed substation. Stormwater runoff could bypass the basin in a storm and cause downstream erosion resulting in a significant impact. Mitigation Measure Hydro-3 would require SDG&E to construct the detention basin to a size that would comply with the City of Chula Vista Development Stormwater Manual. The City requires that detention basins must a) be sized to detain a volume equivalent to runoff from the tributary area generated by an 85<sup>th</sup> percentile 24-hour event, and b) meet flow control criteria outlined in the *Coppermittees of San Diego County Hydromodification Management Plan* (Brown and Caldwell 2011). The water quality detention basin would reduce construction stormwater runoff such that runoff from the substation site would not cause flooding or exceed the capacity of the stormwater drainage system. Implementation of Mitigation Measure Hydro-3 would avoid offsite erosion caused by an overflowing detention basin. The impact from construction of the substation would be less than significant with mitigation.

### **TL 6965 and Miguel Substation Modifications**

Construction of TL 6965 and the Miguel Substation modifications, as well as preparation and use of staging yards, would involve minor surface disturbance and would not alter the drainage pattern of the project area. Construction of TL 6965 would require 2.2 acres of grading for permanent work pads and modified access roads. Concrete foundations would introduce approximately 0.008 to 0.013 acres of impervious surface to the transmission corridor. These additional compacted areas and impervious surfaces would be spread across 5 miles of the transmission corridor and would not substantially change the runoff in any area. Construction at Miguel Substation and use of staging yards will occur on previously graded and graveled areas and would not introduce additional impervious surfaces. None of these activities would alter the course of a stream or river because no streams or rivers are present within the project

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<sup>1</sup> Estimate was calculated using metrics gathered from the San Diego County Hydrology Manual prepared by the County of San Diego Department of Public Works Flood Control Section in June 2003. The manual is available online:  
<http://www.sandiegocounty.gov/dpw/floodcontrol/floodcontrolpdf/hydro-hydrologymanual.pdf>.

## 4.9 HYDROLOGY AND WATER QUALITY

TL 6965 or Miguel Substation areas. The impact from construction of TL 6965 and modifications at Miguel Substation would be less than significant, and no mitigation would be required.

### Operation and Maintenance

Operation and maintenance activities would not alter drainage patterns in the project area or divert the course of a stream or river. Maintenance activities would be conducted in areas that were previously disturbed during construction. Operation and maintenance work would not result in the creation of new impervious surfaces or otherwise result in increased erosion and siltation.

The drainage pattern at the substation site during operation would be greatly altered from the existing drainage pattern at the site. This could result in erosion and downstream siltation if the drainage system at the site is not properly designed to accommodate the new slopes and increased impervious surfaces, causing a significant impact. APM HYDRO-2 requires development and implementation of a Stormwater Management Plan to minimize post-construction impacts to water quality. The presence of the steep slopes and increased impervious surfaces during operation of the project could result in increased sedimentation to downstream areas if the slope stabilization methods and detention basin were not effective in controlling erosion. Mitigation Measure Aesthetics-1 specifies performance standards and corrective actions to ensure the successful revegetation of the hill slope. Mitigation Measure Hydro-3 requires SDG&E to adequately size the detention basin to avoid increase in downstream runoff and erosion. Post-construction impacts from increased erosion off-site would be less than significant with mitigation.

### Mitigation Measures: Hydro-3, Aesthetics-1, and Geology-1

**Mitigation Measure Hydro-3:** The water detention basin to be installed at the substation site shall be designed in accordance with the City of Chula Vista Development Stormwater Manual, which approves use of the following types of stormwater facilities:

- Infiltration facilities or practices, including dry wells, infiltration trenches, infiltration basins, and other facilities that infiltrate runoff to native soils (sized to detain and infiltrate a volume equivalent to the 85th percentile 24-hour event)
- Bioretention facilities and media filters that detain stormwater and filter it slowly (at the rate of about 5 inches per hour) through soil or sand (sized with a surface area of at least 0.04 times the effectively impervious tributary area, or as approved by the City Engineer)
- Extended detention basins, wet ponds, and wetlands or other facilities using settling (sized to detain a volume equivalent to runoff from the tributary area generated by the 85th percentile 24-hour event)

The stormwater detention basin design shall be submitted to the City and CPUC for review and approval no less than 60 days prior to construction.

**Significance After Mitigation: Less than significant.**

## 4.9 HYDROLOGY AND WATER QUALITY

**Impact Hydro-4: Potential to 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 (*Less than significant; no mitigation required*)**

### Construction

#### **Proposed Substation**

Existing municipal stormwater drainage facilities at the proposed substation site consist of concrete brow ditches and a 96-inch-diameter reinforced concrete storm drain dissipator in the ephemeral drainage west of the proposed substation site, which discharges at the base of the slope. The substation site currently drains to the southwest and to the southeast via the brow ditches. All runoff water eventually drains to a tributary of Salt Creek located south of the substation site.

Water from the substation pad would drain towards the water quality detention basin (located on the leveled substation pad west of the substation), which would discharge via a proposed storm drain to the existing 96-inch-diameter storm drain dissipator. Stormwater from the hill slope south of the substation pad would drain to a proposed storm drain outfall at the southern border of the substation parcel and into a drainage easement.

The drainage modifications would be localized at the substation site west of the substation wall and would direct stormwater at the site to the existing storm drain facilities and drainages adjacent to the parcel. The drainage pattern in the local area would not be substantially altered, and no streams or river courses would be altered to cause increased flooding. Impacts from alteration of the drainage on site would be less than significant.

Approximately 172,500 square feet (3.96 acres) of impervious surface would be constructed at the substation site. The additional impervious surfaces have the potential to increase the rate of runoff from the site by approximately 3.7 cubic feet per second in a 2-year, 24-hour storm event<sup>2</sup> (i.e., an event lasting 24 hours that has a 50 percent chance of occurring in any given year). The addition of impervious surfaces could increase the rate of surface runoff, but not to the extent that it would cause downstream flooding. The downstream area consists of undeveloped open space, and the increase of 3.7 cubic feet per second would not result in flooding of structures. The impact would be less than significant and no mitigation is required. While less than significant, the proposed detention basin and Mitigation Measure Hydro-3 would reduce the rate of runoff from the site so that the post-project runoff is similar to pre-project conditions.

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<sup>2</sup> Estimate was calculated using metrics gathered from the San Diego County Hydrology Manual prepared by the County of San Diego Department of Public Works Flood Control Section in June 2003. The manual is available online: <http://www.sandiegocounty.gov/dpw/floodcontrol/floodcontrolpdf/hydro-hydrologymanual.pdf>.

## 4.9 HYDROLOGY AND WATER QUALITY

### TL 6965

Construction activities would not result in large, contiguous areas of ground disturbance or significant alteration of drainage patterns within the transmission corridor. Grading would be limited to select work pads and would not alter the drainage patterns in the transmission corridor.

The total amount of impervious surface that would be added to the transmission corridor would be between 0.008 and 0.013 acres, which would not significantly impact the rate or amount of stormwater or other surface runoff that could contribute to flooding. The potential for flooding impacts from construction of the transmission line would be less than significant, and no mitigation is required.

Increased runoff could occur as a result of vegetation removal and soil compaction in temporary work areas and on unpaved access roads. Vegetation removal and soil compaction would not change the drainage patterns in the area or result in a substantial increase in flooding due to the limited areas of vegetation removal and compaction immediately around the power pole within the transmission corridor. The impact would be less than significant, and no mitigation is required.

### Miguel Substation Modifications and Staging Yards

Minimal ground disturbance would occur at Miguel Substation and within the staging yards. There would be no alteration of drainage patterns or increase in flooding. Impacts would be less than significant.

### Operation and Maintenance

Operation and maintenance activities would not alter drainage patterns in the project area or divert the course of a stream or river. Maintenance activities would be conducted in areas that were previously disturbed during construction. Operation and maintenance work would not result in the creation of impervious surfaces or otherwise result in increased flooding. The impervious surfaces and drainage modifications constructed at the substation would remain during operation. The impervious surfaces and drainage modifications on the site would not increase flooding, as described above. Impacts would be less than significant, and no mitigation is required.

**Mitigation Measures: None Required.**

**Impact Hydro-5: Potential to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or otherwise degrade water quality (*Less than significant with mitigation*)**

### Construction

Water would be required for dust control, to compact soil at the substation site, and also may be required to keep sandy soils firm during augering of pole holes. Runoff from application of water for these tasks would be minimal because water would likely infiltrate the soil. Thus, construction activities would not create or contribute substantial runoff water that would exceed the capacity of the existing or planned stormwater drainage systems in the project area.



## 4.9 HYDROLOGY AND WATER QUALITY

Impacts from application of water for dust control and compaction would be less than significant, and no mitigation is required.

Project construction requires the use of hazardous materials as described in Section 4.8: Hazards and Hazardous Materials. The discharge of these pollutants to waterways could result in generation of polluted runoff and cause a significant impact. APM HAZ-1 requires preparation of a SPCC Plan to control spills and leaks of hazardous materials, APM HAZ-2 requires SDG&E to follow its Management of Contaminated Equipment and Materials, Hazardous Material Business Plan, for management of hazardous waste. APM HYDRO-1 requires implementation of protocols for use, transport, and disposal of hazardous materials and would minimize the potential for the generation of polluted runoff. The project would also adhere to the requirements of the City of Chula Vista Development Stormwater Manual, which requires incorporation of all necessary permanent BMPs into project plans prior to submittal of development and construction permit applications, as well as preparation and submittal of a WQTR. Impacts from polluted runoff would be less than significant with implementation of the proposed APMs. No mitigation is required.

### **Proposed Substation**

Approximately 172,500 square feet (3.96 acres) of impervious surface would be created at the substation site. The 3.96 acres of new impervious surface could impact the volume of water infiltrating the soil and would result in increased volume of runoff water. SDG&E has proposed a water quality detention basin as part of the project design. The purpose of the detention basin is to slow water runoff so that post-project runoff mimics pre-project conditions. The project design also includes storm drain outfalls and bench and terrace drains along the hill slopes. The outfalls, drains, and the detention basin would discharge to an existing discharge dissipator. The project could contribute runoff water that would exceed the capacity of the existing stormwater drainage system if the detention basin is undersized or the drainage system is improperly designed, which would be a significant impact. Mitigation Measure Hydro-3 requires design of the stormwater detention basin in accordance with City of Chula Vista standards. Impacts would be less than significant with mitigation.

### **TL 6965 and Miguel Substation Modifications**

The new poles to be installed to accommodate TL 6965 would result in the creation of approximately 0.008 to 0.013 acres total of impervious surface within the transmission corridor, depending on the final diameters of pole foundations. No impervious surface is anticipated to be created within the staging yards or at Miguel Substation. The small areas of additional impervious surface within the transmission corridor would not create runoff water that would exceed the capacity of stormwater drainage systems. Impacts would be less than significant, and no mitigation is required.

### **Operation and Maintenance**

#### **Proposed Substation**

The impervious surfaces constructed at the substation would remain during operation of the facility. The additional impervious surfaces could create or contribute runoff water that would

## 4.9 HYDROLOGY AND WATER QUALITY

exceed the capacity of existing or planned stormwater drainage systems if the detention basin is too small, as discussed above. Mitigation Measure Hydro-3 requires that SDG&E properly size the detention basin in accordance with City stormwater standards. Impacts would be less than significant with mitigation.

Water would be used during operation for landscape irrigation around the new substation. Water would infiltrate the soil within landscaped areas and runoff from the site during irrigation activities would be minimal and follow the established drainage system. The irrigation system would not contribute runoff water that would exceed the volume of the stormwater drainage system. Impacts from irrigation would be less than significant.

Mineral oil, a hazardous material, would be used during operation of the substation to run two transformers at the substation. Each of the two transformers would require a maximum of 5,500 gallons of mineral oil. Concrete containment basins would provide oil containment for the entire substation facility and around each transformer, which would provide sufficient containment if an oil-containing structure were to rupture and release oil. Impacts from polluted runoff would be less than significant due to on-site containment of hazardous materials within the oil containment basin. No mitigation is required.

### **TL 6965**

Herbicides may be used to prevent vegetation that is cleared during vegetation management activities from re-establishing during project operation. Herbicide application is currently occurring within the transmission corridor. The current protocols for use, transport, and disposal of hazardous materials, including herbicides, in the transmission corridor would continue to be implemented during project operation and maintenance. Impacts from use of herbicides and other hazardous materials during the operation and maintenance of TL 6965 would be similar to the existing conditions in the transmission corridor. Impacts would be less than significant, and no mitigation is required.

### **Miguel Substation Modifications**

Operation and maintenance activities at Miguel Substation would be similar to existing activities. The proposed equipment would not be a source of pollutants that could enter drainages. Impacts would be less than significant, and no mitigation is required.

### **Mitigation Measures: Hydro-3**

**Significance After Mitigation: Less than significant.**

**Impact Hydro-6: Potential to 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 (*No impact*)**

The project does not involve building or placement of new housing. No impact would occur.

**Mitigation Measures: None required.**

## 4.9 HYDROLOGY AND WATER QUALITY

### **Impact Hydro-7: Potential to locate structures that would impede or redirect flood flows within a 100-year flood hazard area (*No impact*)**

The project area does not intersect or span any 100-year flood hazard areas. The project is within approximately 100 feet of the Telegraph Canyon Creek flood zone and is also near the Salt Creek and Sweetwater River flood zones. None of these flood zones would intersect any project elements and no structures would be installed within flood zones. No impact would occur.

**Mitigation Measures: None required.**

### **Impact Hydro-8: Potential to 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 (*No impact*)**

The project area does not intersect or span any 100-year flood hazard areas. The proposed project area is entirely located within FEMA Zone X, which is subject to minimal flood risks. The project is within approximately 100 feet of the Telegraph Canyon Creek flood zone and is also near the Salt Creek and Sweetwater River flood zones. None of these flood zones would intersect any project elements and no construction work would be conducted within flood zones. There would be no impact.

There are no levees or dams within the project area. The closest dams are Sweetwater Dam, Upper Otay Dam, and Savage Dam, which are located from 1.3 to 2.1 miles from the project. The proposed project area is not located within a dam failure inundation area. Project construction and operation would not expose people or structures to significant risk of loss, injury, or death as a result of flooding. The project would not increase the volume of runoff water to the extent that any new structures would be within a flood zone (see Impact Hydro-4). There would be no impact related to flooding.

**Mitigation Measures: None required.**

### **Impact Hydro-9: Potential to cause inundation by seiche, tsunami, or mudflow (*No impact*)**

The risk of inundation from a tsunami is greatest along an exposed coast and greatly decreases with distance from the coast. The proposed project is located approximately 11 miles from the Pacific Ocean; therefore, impacts from tsunamis are highly unlikely. The project area does not span any lakes, pools, or other closed water bodies. Four lakes are present within 2 miles of the project area (Upper Otay Lake, Lower Otay Lake, Sweetwater Reservoir, and East Lake). Effects from seiches would be localized and highly unlikely to propagate to the project area. The potential for damage due to a seiche is considered very low (Geosyntec 2012). It is unlikely that a mudflow would occur in the project area because it is not located downslope from steep canyons in which a mudflow could originate. Poles would be installed at depths of 6 to 30 feet below ground and, therefore, would be able to withstand a mudflow in the unlikely event one was to occur. No impact would occur and no mitigation is required.

**Mitigation Measures: None required.**

## 4.9 HYDROLOGY AND WATER QUALITY

### 4.9.6 Project Alternatives

Table 4.9-5 provides a summary of the potential impacts to hydrology and water quality from the project alternatives.

**Table 4.9-5 Summary of Impacts from Alternatives by Significance Criteria**

Significance Criteria	No Project Alternative	Alternative 1	Alternative 2	Alternative 3
Impact Hydro-1: Potential to violate any water quality standards or waste discharge requirements	Less than significant	Less than significant APM HYDRO-1, APM HYDRO-2, APM HAZ-1 MM Hydro-2	Less than significant APM HYDRO-1, APM HYDRO-2, APM HAZ-1 MM Hydro-2	Less than significant APM HYDRO-1, APM HYDRO-2, APM HAZ-1 MM Hydro-2
Impact Hydro-2: Potential to 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	No impact	Less than significant	Less than significant	Less than significant
Impact Hydro-3: Potential to 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	No impact	Less than significant with mitigation APM HYDRO-1, APM HYDRO-2 MM Aesthetics-1, MM Geology-1, MM Hydro-3	Less than significant with mitigation APM HYDRO-1, APM HYDRO-2 MM Aesthetics-1, MM Geology-1, MM Hydro-3	Less than significant with mitigation APM HYDRO-1, APM HYDRO-2 MM Aesthetics-1, MM Geology-1, MM Hydro-3
Impact Hydro-4: Potential to 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	No impact	Less than significant	Less than significant	Less than significant
Impact Hydro-5: Potential to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or otherwise degrade water quality	Less than significant	Less than significant with mitigation APM HYDRO-1, APM HAZ-1, APM HAZ-2 MM Hydro-3, MM Hydro-Alt 1-1	Less than significant with mitigation APM HYDRO-1, APM HAZ-1, APM HAZ-2 MM Hydro-3	Less than significant with mitigation APM HYDRO-1, APM HAZ-1, APM HAZ-2 MM Hydro-3

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Significance Criteria	No Project Alternative	Alternative 1	Alternative 2	Alternative 3
Impact Hydro-6: Potential to 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	No impact	No impact	No impact	No impact
Impact Hydro-7: Potential to locate structures that would impede or redirect flood flows within a 100-year flood hazard area	No impact	No impact	No impact	No impact
Impact Hydro-8: Potential to 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	No impact	No impact	No impact	No impact
Impact Hydro-9: Potential to cause inundation by seiche, tsunami, or mudflow	No impact	No impact	No impact	No impact

### Alternative 1: 230/12-kV Substation and 230-kV Loop-In

#### Environmental Setting

Alternative 1 would involve construction of a 230/12-kV substation within the SDG&E fee-owned parcel south of Hunte Parkway. The hydrology and water quality conditions for proposed substation and Hunte Parkway and OTC staging yards described in Section 4.9.1 would apply to this alternative. The transmission corridor would not be used under this alternative. The environmental setting for the transmission corridor and Miguel Substation are not part of the environmental setting for Alternative 1.

#### Impacts and Mitigation Measures

Potential impacts to hydrology and water quality resulting from construction and operation of Alternative 1 would be similar to the substation component of the proposed project. Impacts related to groundwater supplies, and runoff from water application (e.g., for dust suppression during construction) would be less than significant. Impacts related to flood hazards zones, damage from flooding, tsunamis, seiches, and mudflows would have no impact. These impacts would be similar to the proposed project because the 230/12-kV substation would be in the same location as the proposed substation.

Construction of the 230/12-kV substation would take longer, require more earthwork and ground disturbance, and create more impervious surface area (approximately 5.1 acres) than the proposed substation (approximately 3.96 acres), increasing the potential for stormwater runoff to impact water quality. Discharge of polluted stormwater and turbidity would constitute a

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significant impact. Similar to the proposed project, potential impacts to surface waters from polluted stormwater runoff and turbidity would be reduced through implementation of APMs HYDRO-1, HYDRO-2, HAZ-1, and HAZ-2. These APMs require BMPs for sediment and erosion control and spill control and clean up. Impacts from sedimentation and increased stormwater runoff would be significant even after implementation of APMs. Mitigation Measures Aesthetics-1, Geology-1, and Hydro-2 would reduce impacts from polluted stormwater and increased runoff volume by requiring permanent BMPs, revegetation in accordance with geotechnical recommendations, and proper discharge of groundwater during dewatering. Impacts to water quality would be less than significant with mitigation.

Water from the 230-kV substation pad would drain toward a water detention basin similar to that included in the proposed project. The basin for the larger 230-kV substation would be about 20,000 square feet. The drainage modifications could alter drainage patterns on the site such that substantial erosion or siltation could occur off site. The detention basin for the proposed substation was not sized in accordance with the City of Chula Vista Stormwater Manual and was not sized for the larger area of impervious surface required for the 230-kV substation. The manual specifies the required size of the detention basin based on the amount of impervious surface added (there is additional impervious surface for the 230-kV substation relative to the proposed project). The proposed size of the basin could result in stormwater runoff overflowing the basin in a large storm, exceeding the capacity of the stormwater drainage system, and causing downstream erosion, which would be a significant impact. Mitigation Measure Hydro-3 would require SDG&E to size the detention basin to comply with City of Chula Vista requirements including the City of Chula Vista Development Stormwater Manual. Impacts to drainage and erosion would be less than significant with mitigation.

The larger substation would use more transformers than the proposed substation, and would use and store larger amounts of oil. Approximately 10,000 gallons of oil would be required for each of the three transformers (two transformers plus a spare, which is a total of 30,000 gallons of oil), while the proposed project would require 5,500 gallons of oil for each of two transformers (for a total of 11,000 gallons). A spill of transformer oil during transformer filling or another hazardous fluid during substation construction, operation and maintenance could be transported off site into a nearby waterway, which would be a significant effect. SDG&E would implement an SPCC Plan under APM HAZ-1. The SPCC Plan would establish procedures, methods, equipment requirements, and worker training to prevent spills or leaks from reaching waterways and leaving the site. The plan would also define measures to clean up any spills. However, even with APM HAZ-1 the size of the oil containment basin as currently proposed would be inadequate to contain all of the 30,000 gallons of oil contained in the transformers. A release of all of this material would adversely affect water quality and would constitute a significant impact. Mitigation Measure Hydro-Alt 1-1 requires sizing of the oil containment basin to contain all of the oil within the 230-kV transformers. Impacts would be less than significant with implementation of Mitigation Measure Hydro-Alt 1-1.

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**Mitigation Measure Alternative 1, Hydro-Alt 1-1.** SDG&E shall design the oil containment basin to be installed at the substation site to be of adequate size to contain all of the oil that will be contained in the three transformers.

Alternative 1 would not involve installation of a 5-mile-long, 69-kV power line along the existing ROW. Hydrology and water quality impacts resulting from construction of the power line and use of the Eastlake Parkway and Miguel Substation staging yards would not occur. Impacts associated with construction of work pads, power line poles, and use of new and temporary access roads along the transmission corridor would not occur.

Impacts to hydrology and water quality resulting from Alternative 1 would be less than significant with implementation of APMs HYDRO-1, HYDRO-2, HAZ-1, and HAZ-2, and Mitigation Measures Aesthetics-1, Geology-1, Hydro-2, Hydro-3, and Hydro-Alt 1-1, and would be less than those associated with the proposed project.

### **Alternative 2: 69/12-kV Substation and Generation at Border and Larkspur Electric Generating Facilities**

#### **Environmental Setting**

Alternative 2 would involve construction of a substation, distribution lines, and TL 6910 loop-in in the same manner as the proposed project. The existing hydrology and water quality conditions for the proposed substation and Hunte Parkway and OTC staging yards described in Section 4.9.1 would apply to this alternative. The transmission corridor would not be used under this alternative and is not part of the environmental setting for Alternative 2.

The Border and Larkspur electric generating facilities are located within the Tijuana Hydrologic Unit (Figure 4.9-1). The Tijuana Hydrologic Unit receives up to 25 inches of precipitation annually (SDRWQCB 2011).

#### **Impacts and Mitigation Measures**

Potential impacts to hydrology and water quality resulting from construction and operation of Alternative 2 would be similar to the proposed substation, distribution lines, and loop-in components of the proposed project because these features would be in the same location and configuration as the proposed project. Similar to the proposed project, impacts related to groundwater supplies, runoff from application of water (e.g., for dust suppression during construction), and flooding would be less than significant, and impacts related to flood hazards zones, damage from flooding, tsunamis, seiches, and mudflows would have no impact.

Similar to the proposed project, Alternative 2 could result in significant impacts to surface waters from polluted stormwater runoff and turbidity during construction, operation and maintenance. Impacts from stormwater runoff and turbidity would be reduced through implementation of APMs HYDRO-1, HYDRO-2, HAZ-1, and HAZ-2. These APMs require sediment and erosion control BMPs and spill prevention and clean-up. Impacts from sedimentation and increased runoff would still be significant with these APMs. Mitigation Measures Aesthetics-1, Geology-1, Hydro-2, and Hydro-3 would reduce these impacts through revegetation of the substation slope, permanent BMPs to improve water quality, proper

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handling of dewatering discharge, and proper sizing of the detention basin. Impacts from polluted runoff from Alternative 2 would be less than significant with mitigation, and similar to the proposed project.

Alternative 2 would not involve installation of a 5-mile-long, 69-kV power line within the transmission corridor. Impacts to hydrology and water quality resulting from construction of the power line and use of the Eastlake Parkway and Miguel Substation staging yards would not occur. Impacts associated with construction of work pads, power line poles, and use of new and temporary access roads along the transmission corridor would not occur. Use of the existing gas turbines at Border and Larkspur electric generating facilities would have no impact on hydrology and water quality because these facilities currently exist, and no modifications would be required to produce the additional electricity required for this alternative.

Impacts to hydrology and water quality resulting from Alternative 2 would be less than significant with implementation of APMs HYDRO-1, HYDRO-2, HAZ-1, and HAZ-2, and Mitigation Measures Aesthetics-1, Geology-1, Hydro-2, and Hydro-3. Impacts would be less than those associated with the proposed project because no impacts would occur within the transmission corridor under this alternative.

### **Alternative 3: 69/12-kV Substation and Underground 69-kV Power Line within Public ROW**

#### **Environmental Setting**

Alternative 3 would involve construction of the substation, distribution lines, and TL 6910 loop-in in the same manner as the proposed project. The existing hydrology and water quality conditions, as described in Section 4.9.1, for the proposed substation, Miguel Substation, and the Miguel Substation, Hunte Parkway, and OTC staging yards would apply to this alternative.

Alternative 3 would not include construction of the above-ground TL 6965; instead, this alternative would involve construction of a 69-kV underground power line within public ROW along Hunte Parkway, Proctor Valley Road, and Mountain Miguel Road. The proposed 69-kV line would be installed overhead in the same configuration as the proposed project within Miguel Substation only. The transmission route with the underground component would be 1 mile longer than the proposed project route.

Hunte Parkway, Proctor Valley Road, and Mountain Miguel Road are located in the same watersheds as the proposed project. The underground power line alignment would cross a tributary of Salt Creek on Hunte Parkway and a tributary of the Sweetwater River on Mountain Miguel Road, just south of Miguel Substation. The proposed project alignment also spans the same northern tributary as spanned by the proposed TL 6965. The portion of the underground alignment along the northernmost 1 mile of Hunte Parkway would be parallel to, and 300 to 400 feet west of, Salt Creek. Upper Otay Lake and Lower Otay Lake are located approximately 0.7 miles and 0.9 miles east, respectively, of the closest project components. The FEMA flood zone for Salt Creek is located approximately 200 feet east of the underground alignment along Hunte Parkway, at its closest point. No flood zones would be spanned or intersected by the alignment.



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### Impacts and Mitigation Measures

Potential impacts to hydrology and water quality resulting from construction and operation of Alternative 3 would be similar to the impacts from construction activities associated with the proposed project substation and construction at Miguel Substation. Similar to the proposed project, impacts related to groundwater supplies, runoff from application of water (e.g., for dust suppression during construction), and flooding would be less than significant, and impacts related to flood hazards zones, damage from flooding, tsunamis, seiches, and mudflows would have no impact.

**69/12-kV Substation.** Similar to the proposed project, construction, operation, and maintenance of the Alternative 3 substation could result in significant impacts to surface waters from polluted stormwater runoff and turbidity. Impacts from stormwater runoff and turbidity would be reduced through implementation of APMs HYDRO-1, HYDRO-2, HAZ-1, and HAZ-2. These APMs require sediment and erosion control BMPs and spill prevention and clean-up. Impacts from sedimentation and increased runoff would still be significant with these APMs. Mitigation Measures Aesthetics-1, Geology-1, Hydro-2, and Hydro-3 would reduce these impacts through revegetation of the substation slope, permanent BMPs to improve water quality, proper handling of dewatering discharge, and proper sizing of the substation detention basin. Impacts from polluted runoff at the Alternative 3 substation would be less than significant with mitigation, and similar to the proposed project.

**69-kV Underground Power Line.** Construction of the underground portion of the power line would occur within public roads that are paved; therefore, the construction would not create impervious surfaces in the Alternative 3 power line area. The roads would be re-paved, and no net change in the amount of impervious surface would occur following construction of the power line. Hazardous materials would be required for equipment and vehicle operation during construction and maintenance of Alternative 3. Hazardous materials (e.g., tar, paint) would be applied to the roadway during road resurfacing. These hazardous materials could cause polluted runoff, which would be a significant impact. APM HAZ-1 requires clean-up of any spills of hazardous materials. APM HYDRO-1 requires implementation of protocols for use, transport, and disposal of hazardous materials. These APMs would avoid impacts from polluted runoff. Impacts to water quality from construction, operation and maintenance of Alternative 3 would be less than significant. The drainage pattern would not be altered by construction of the underground portion of Alternative 3, and there would be no impact related to flooding, erosion, or downstream siltation. No streams or FEMA flood zones would be crossed, spanned, or otherwise used for Alternative 3 construction. There would be no impacts to FEMA flood zones or streams from the Alternative 3 underground power line.

Impacts to hydrology and water quality resulting from Alternative 3 would be less than significant with implementation of APMs HYDRO-1, HYDRO-2, HAZ-1, and HAZ-2, and Mitigation Measures Aesthetics-1, Geology-1, Hydro-2 and Hydro-3. Impacts to hydrology and water quality from Alternative 3 would be similar to those associated with the proposed project.

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### No Project Alternative

Under the No Project Alternative, SDG&E would meet energy needs of the southeast Chula Vista area by adding two additional transformer banks at the Proctor Valley Substation and by installing 6 to 7 miles of distribution circuits. Distribution circuits would likely be installed underground along various routes in the Otay Ranch area. The impacts from installation of the underground distribution circuits would be similar to those described for installation of the underground power line in Alternative 3. None of the facilities associated with the proposed project or alternatives evaluated in this Draft EIR would be constructed. Therefore, none of the impacts associated with hydrology and water quality described in this section would occur, other than the less than significant effects of installing the underground distribution lines described under Alternative 3. Impacts would be less than significant.

The two transformer banks at Proctor Valley Substation are currently approved and would be constructed even if the proposed project were constructed. Construction of the transformer banks at Proctor Valley Substation was previously considered, and there would be no additional impacts from this construction under the No Project Alternative.