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CHAPTER 4 – ENVIRONMENTAL IMPACT ASSESSMENT

4.8 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Measures	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☑	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, causing a net deficit in aquifer volume or a lowering of the local groundwater table level? (In other words, would the production rate of pre-existing nearby wells drop to a level that would not support existing land uses or planned uses for which permits have been granted?)	☐	☐	☑	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial on- or off-site erosion or siltation?	☐	☐	☑	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase to the rate or amount of surface runoff in a manner that would result in on- or off-site flooding?	☐	☐	☑	☐
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?	☐	☐	☐	☑

Would the project:	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Measures	Less-Than-Significant Impact	No Impact
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) Inundation by seiche, tsunami, or mudflow?	☐	☐	☑	☐

4.8.0 Introduction

This section describes the existing surface and groundwater hydrology, use, and quality, as well as the potential for erosion and flooding in the proposed San Diego Gas & Electric Company (SDG&E) South Bay Substation Relocation Project (Proposed Project) area. It also describes the potential impacts from construction, operation, and maintenance of the Proposed Project to these resources. With the implementation of the Proposed Project's Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention, Control, and Countermeasure (SPCC) Plan, which are both required by law, as well as SDG&E's Water Quality Construction Best Management Practices (BMP) Manual, the Proposed Project would result in a less-than-significant impact to hydrology and water quality.

4.8.1 Methodology

Hydrology and water quality in the Proposed Project area were evaluated through reconnaissance-level surveys and review of water quality studies and environmental impact reports from other projects in the area, city and county general plans, United States (U.S.) Geological Survey (USGS) 7.5-minute series quadrangle maps, and online geographical information system sources. Aerial photographs of the Proposed Project area were also reviewed. The San Diego Regional Water Quality Control Board's (RWQCB) Water Quality Control Plan for the San Diego Basin was reviewed to ensure compliance with state and local regulations. Federal Emergency Management Agency (FEMA) maps were referenced to determine the location and extent of flood zones.

Each component of the Proposed Project, including the Bay Boulevard Substation, 230 kilovolt (kV) loop-in, 69 kV relocation, 138 kV extension, and the demolition of the South Bay Substation were considered in this analysis. However, where existing conditions or potential impacts are identical for multiple components, they are described together in the subsections that follow.

4.8.2 Existing Conditions

The regulatory requirements and overall existing hydrologic conditions of the Proposed Project are described in the following subsections.

Regulatory Background

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code [USC] § 1251 *et seq*.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the Waters of the U.S. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

Clean Water Act Section 402

The National Pollutant Discharge Elimination System (NPDES) program was established in 1972 to control discharges of pollutants from defined point sources (33 U.S.C. § 1342). The program originally focused on industrial-process wastewater and Publically-Owned Treatment Works. In 1987, Section 402 of the CWA was amended to include requirements for five separate categories of stormwater discharges, known as Phase I facilities. Phase I facilities include:

- Facilities already covered by an NPDES permit for stormwater
- Facilities that engage in industrial activities
- Large municipal separate storm drain systems that serve more than 250,000 people
- Medium municipal separate storm drain systems that serve between 100,000 and 250,000 people
- Facilities that are considered significant contributors of pollutants to Waters of the U.S.

The U.S. Environmental Protection Agency (EPA) issued a final rule for Phase II discharges in August 1995. Phase II stormwater discharges include light industrial facilities, small construction sites (less than five acres), and small municipalities (less than 100,000 population).

In California, NPDES permitting authority is delegated to, and administered by, the nine RWQCBs. On August 19, 1999, the State Water Resources Control Board (SWRCB) reissued General Permit for Stormwater Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) and later that year amended the permit to apply to sites as small as one acre.

On September 2, 2009, the SWRCB adopted Order No. 2009-0009-DWQ (General Permit), which reissued the Order 99-08-DWQ for projects disturbing one or more acres of land, or that are part of a common plan of development or sale that disturbs more than one acre of land. The new permit will become effective July 1, 2010, and all existing dischargers and new dischargers will need to obtain coverage under the new permit by submitting Permit Registration Documents (PRDs).

The General Permit requires the implementation of a SWPPP, which must be prepared before construction begins and kept on site throughout the construction process. In accordance with the Order No. 2009-0009-DWQ, the SWPPP must include:

- Identification of pollutant sources and non-stormwater discharges associated with construction activity
- Specifications for BMPs that will be implemented during project construction to minimize the potential for accidental releases and runoff from the construction areas, including temporary construction yards, pull sites, and other temporary work areas
- Calculations and design details, as well as BMP controls for site run-on
- BMPs used to eliminate or reduce pollutants after construction is complete
- Certification from a Qualified SWPPP Developer

While the SWPPP lays out the groundwork for compliance with the General Permit, it is also a repository for completed Rain Event Action Plans (REAPs). During construction, the REAP is the site-specific plan that is geared to each specific phase of construction and rain event. The REAP was not previously required under Order 99-08-DWQ.

Clean Water Act Section 404

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (USACE) to regulate the discharge of dredged or fill material to Waters of the U.S., including wetlands (33 U.S.C. § 1344.). The USACE issues individual site-specific or general (Nationwide) permits for such discharges.

Clean Water Act Section 401

Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters must provide the licensing or permitting agency with a Water Quality Certification that the discharge will comply with the applicable CWA provisions or a waiver (33 U.S.C. § 1341.). If a federal permit is required, such as a USACE permit for dredge and fill discharges, the project proponent must also obtain a Water Quality Certification from the RWQCB.

Clean Water Act Sections 303 and 304

Section 303 of the CWA requires states to adopt water quality standards for all surface Waters of the U.S. (33 U.S.C. § 1313.) Section 304(a) requires the U.S. EPA to publish water quality criteria that accurately reflect the latest scientific knowledge on the kind of effects and extent of effects that pollutants in water may have on health and welfare (33 U.S.C. § 1314(a)). Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed when numerical standards cannot be established or when they are needed to supplement numerical standards.

Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which the U.S. EPA has published water quality criteria and which could reasonably be expected to interfere with designated uses in a waterbody.

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of waterbodies with poor water quality. The waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water segments on the lists and develop action plans, called Total Maximum Daily Loads, to improve water quality.

Rivers and Harbors Appropriation Act Section 10

Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. § 401, *et seq.*) makes it unlawful to obstruct or alter a navigable river or other navigable Water of the U.S. Construction, excavation, or deposition of materials in, over, or under such waters, or any work that would affect the course, location, condition, or capacity of those waters requires a Section 10 permit and approval from the USACE.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on USACE studies. The FEMA is also responsible for distributing the Flood Insurance Rate Maps used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain. The FEMA allows non-residential development in floodplains; however, construction activities are restricted within flood hazard areas, depending on the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations, enabling the FEMA to require municipalities that participate in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

State and Local

Fish and Game Code

Sections 1601 through 1606 of the California Fish and Game Code require an agreement between the Department of Fish and Game (CDFG) and an entity proposing to substantially divert or obstruct the natural flow or affect changes to the bed, channel, or bank of any river, stream, or lake. The agreement is designed to protect the fish and wildlife values of a river, lake, or stream.

State Water Resources Control Board Order 2001-11-DWQ

The SWRCB adopted a statewide permit for dewatering utility vaults and underground structures (Statewide General NPDES Permit for Discharges from Utility Vaults & Underground Structures to Surface Waters [General Permit CAG990002]) in 2001. This permit authorizes permittees to discharge uncontaminated water from vaults and substructures to surface waters during the operational phase of projects.

Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967, Water Code Section 13000 *et seq*., requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect Waters of the State. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for the Proposed Project area are contained in the Water Quality Control Plan for the San Diego Basin (Basin Plan).

The Region 9 RWQCB is responsible for protecting the beneficial uses of surface water and groundwater resources in the San Diego area. The RWQCB adopted the Basin Plan in September 1994. The plan sets forth implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. Discharges to surface waters within the approximately 3,900 square miles of the San Diego Basin are subject to the regulatory standards set forth in the Basin Plan, which prevents the unauthorized discharge of pollutants into Waters of the U.S. and State. NPDES permits, waste discharge requirements, and waivers are mechanisms used by the RWQCB to control discharges and protect water quality.

California Coastal Act

New development proposed within the coastal zone must receive a Coastal Development Permit, Exemption, or Waiver from the California Coastal Commission (CCC) in accordance with the California Coastal Act (CCA) of 1976. On land, the coastal zone varies in width from several hundred feet in highly urbanized areas up to five miles in certain rural areas. The CCC has jurisdiction over any wetlands, streams, lakes, and other freshwater resources within the coastal zone. The CCC works in partnership with certified Local Coastal Programs (LCPs) and Land Use Plans (LUPs), which provide basic planning strategies to the 75 coastal cities and counties that regulate local development. The City of Chula Vista's LCP is described in more detail in Section 4.9 Land Use and Planning.

California State Lands Commission Land Use Leases

The California State Legislature created the California State Lands Commission (CSLC) in 1939 to manage and protect some 4.5 million acres of land held in public trust for the people of California. The CSLC protects and maintains the public's right to access these trust lands. These public trust lands include the water and beds of California's naturally navigable rivers, lakes, and streams, as well as a three-mile-wide section of tidal and submerged lands along the coastline, including offshore islands, bays, estuaries, and lagoons. The public trust lands are maintained for the purposes of water-related commerce, navigation, fisheries, recreation, and ecological preservation. The CSLC issues Land Use Leases for electric transmission line construction activities that occur on lands under its jurisdiction. The CSLC is a trustee agency for any projects that could affect public trust resources or uses. The Proposed Project is located on public trust lands that the CSLC has conveyed to the Port District.

San Diego Regional Water Quality Control Board Municipal Storm Water Permit

The San Diego RWQCB issued the San Diego Municipal Permit (NPDES No. CAS0108758) to the County of San Diego, Unified Port of San Diego (Port District), and 18 cities in the region with the primary goal of preventing polluted discharges from entering the stormwater conveyance system and local receiving and coastal waters. Pursuant to the permit, the co-

permittees are required to develop and implement measures that would address and prevent pollution from development projects. Development projects are also required to include BMPs in the permanent design to reduce pollutant discharges from their project sites**.**

County of San Diego Standard Urban Stormwater Mitigation Plan

In order to comply with the San Diego RWQCB's San Diego Municipal Permit (NPDES No. CAS0108758), a Standard Urban Stormwater Mitigation Plan (SUSMP) was developed for San Diego County. A Storm Water Management Plan that complies with the criteria provided in the SUSMP must be developed for applicable projects in San Diego County.

General Setting

The Proposed Project is situated in the San Diego Basin, within the Otay Hydrologic Unit (910.00) and the Otay Valley Subarea (910.20). San Diego is considered to have a Mediterranean climate, with sunny days 70 percent of the year. Most of San Diego County's annual rainfall occurs during the winter months, with 50 percent of it falling from December to February. Only two percent of the annual rainfall occurs during the summer months. Annual average precipitation for the Proposed Project area is approximately 9.1 inches per year, with a minimum of 0.9 inches and a maximum of 16.1 inches. The Proposed Project area is relatively flat and sits at approximately 10 to 23 feet above Mean Sea Level (MSL), with the lowest elevation in the southwest corner of the former Liquefied Natural Gas (LNG) facility bermed containment area and the highest elevation at the top of the containment berm.

Surface Waters

The Proposed Project is adjacent to the Western Salt Works salt crystallizer ponds, which are located within the southern section of San Diego Bay. The Otay River is located approximately 1.25 miles south of the Bay Boulevard Substation site. Approximately 10 seasonal ponds, which are wetland features, are located within the Bay Boulevard Substation site, and an additional six seasonal ponds are located in the remainder of the Proposed Project area. Four of the seasonal ponds in the Bay Boulevard Substation site are located within the former LNG facility containment berms. Additionally, an emergent wetland is located within the drainage ditch paralleling Bay Boulevard at the southeastern edge of the Proposed Project site. Furthermore, the 138 kV extension alignment crosses Telegraph Canyon Creek—a concrete-lined channel that flows east to west just north of the existing South Bay Substation. Several small drainages, two of which are concrete-lined, are also located within the Proposed Project area north of the Bay Boulevard Substation site. The drainages do not contain flowing water on a regular basis, but they do capture runoff and control stormwater. The locations of all surface water features within the Proposed Project area are depicted on Figure 4.4-3: Hydrological Features Map in Section 4.4 Biological Resources.

Groundwater

The site is located between a fluvial dominated riverine system upstream and a tidally dominated estuarine system downstream. Groundwater depths range between five and 13.5 feet below the existing grade based on recent test borings. Groundwater levels within the Proposed Project area are considered to be relatively stable, but groundwater depths may increase slightly during the summer dry months. The groundwater levels within the Proposed Project area can fluctuate

slightly (generally less than one foot) with the tide of San Diego Bay and the water level in the adjacent salt marsh and wetland.

Surface Water Quality

The Basin Plan designates beneficial uses for surface and groundwaters in the San Diego Basin, as well as sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy. Beneficial uses of inland surface waters generally include recreation and warm or cold freshwater habitat. Telegraph Canyon Creek also includes municipal and domestic water supply, industrial service supply, and wildlife habitat.

Beneficial uses of coastal waters in the region generally include recreation, estuarine habitat, wildlife habitat, rare, threatened, or endangered species, and marine habitat. The Pacific Ocean and San Diego Bay also include beneficial uses for navigation.

According the San Diego Basin RWQCB's 2006 CWA, Section 303d List of Water Quality Limited Segments Requiring Total Maximum Daily Loads, the San Diego Bay at J Street in Chula Vista is listed for bacteria from unknown sources. No other impaired waterbodies are located in close proximity to the Proposed Project.

Floodplains

The Proposed Project does not cross or lie in the 100-year flood zones of any river or the San Diego Bay. Flood zone information for the Proposed Project area is located on the FEMA Flood Insurance Rate Maps (FIRMs).

Dam Failure Inundation Areas

The Office of Emergency Services is responsible for the identification of inundation areas for dam failures in California. The Proposed Project is not located within an inundation area for dam failure.

4.8.3 Impacts

Significance Criteria

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, 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
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site

- Create or contribute to runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff

- Otherwise substantially degrade water quality

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

- Place structures that would impede or redirect flood flows within a 100-year flood hazard area

- 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

- Cause inundation by seiche, tsunami, or mudflow

Question 4.8a – Water Quality Standards and Waste Discharge Violations

Construction – Less-than-Significant Impact

Construction of the Bay Boulevard Substation, 230 kV loop-in, 69 kV relocation, 138 kV extension, and the demolition of the existing South Bay Substation would result in ground disturbance and expose soils to erosion and sedimentation. Equipment and construction materials stored within the substation, right-of-way (ROW), and staging area could come in contact with rain water or stormwater runoff that could potentially transport deleterious substances overland to the nearby San Diego Bay or through drop-inlets into the concrete-lined Telegraph Canyon Creek. A list of hazardous materials that are anticipated to be used during construction is included in Table 4.7-3: Hazardous Materials Typically Used for Construction in Section 4.7 Hazards and Hazardous Materials. In addition, stormwater contact with litter and/or construction materials could pose a threat to nearby water quality.

Because the Proposed Project is greater than one acre in size, SDG&E would be required to comply with the General Permit (Order No. 2009-0009-DWQ) and submit PRDs to the SWRCB indicating how the transport of hazardous materials from work areas would be avoided or minimized. Under the General Permit, the Proposed Project would be considered a Type 2 Linear Underground/Overhead Project (LUP) and would be regulated as a LUP. Based on preliminary calculations, the Proposed Project would have a low sediment risk or a Level 1 Sediment Risk using the Revised Universal Soil Loss Equation (RUSLE). Table 4.8-1: Sediment Risk Determination provides the parameters used to determine potential soil loss from the Bay Boulevard Substation site, ROW, and associated work areas.

Table 4.8-1: Sediment Risk Determination

Soil Parameter	Assumption	Factor
Rainfall-runoff	Calculated using the EPA's Rainfall Erosivity Factor Calculator with the assumption that soil could be exposed at any given location for up to one year	R=19.2
Soil erodibility	A silt soil type was used to represent the highest erodibility because the site contains fill material and non-homogeneous soils	K=0.64
Length and slope	Slope length on the site does not exceed 1,000 feet with a two percent or less gradient	LS=0.69
Cover	Bare ground to simulate worse-case scenario	C=1.0
Sediment controls	No sediment controls to simulate bare ground and worse-case scenario	C=1.0
Potential sheet erosion and/or rill erosion in tons per acre	Calculated using the RUSLE	A=8.5

For LUPs, projects that have an estimated A-value of 15 tons per acre or less are considered to have low sediment risk. Projects that discharge to a 303d-listed waterbody impaired for sediment, have a TMDL plan for sediment, or have beneficial uses for cold freshwater habitat, spawning, and migration are considered to have a high receiving water risk. Potential runoff from the Proposed Project would not discharge to waterbodies with any of these conditions. Receiving water risk is considered to be low and the combined risk is considered to be low or Level 1.

Potential impacts to water quality would be minimized through implementation of SDG&E's Water Quality Construction BMP Manual, the SWPPP, and REAPs developed for the Proposed Project. In addition, the results of post-storm inspections and the effectiveness of BMPs would be submitted to the SWRCB in accordance with the General Permit. SDG&E would also comply with local stormwater requirements, as detailed in the County of San Diego SUSMP. As a result, the Proposed Project would result in a less-than-significant impact to water quality and waste discharge requirements.

Operation and Maintenance – Less-than-Significant Impact

The Bay Boulevard Substation, transmission line ROW, and work areas would be stabilized using BMPs, including reseeding or, in the case of the substation, road base or gravel, to provide permanent stabilization. Daily operation and maintenance of the Proposed Project would not impact water quality or result in discharges to waters as existing access roads would be used to access Proposed Project components. Runoff from the substation would be directed to water quality control basins, as depicted in Figure 3-3: Bay Boulevard Substation Conceptual Site Plan in Chapter 3 - Project Description, which would be designed to retain surface flows, promote groundwater infiltration, and remove sediment and urban pollutants.

The Bay Boulevard Substation would include two oil-filled transformers with a maximum capacity of 80,000 gallons. These transformers would have the potential to leak hazardous oil. In order to minimize impacts, the Bay Boulevard Substation would include a secondary containment system to prevent accidently released oil from entering any nearby waterways. In addition, a copy of the substation's SPCC Plan would be maintained on site and would contain specific procedures for managing hazardous materials during the operation phase of the Proposed Project. Therefore, an accidental spill is not anticipated to result in a water quality violation and impacts would be less than significant.

Question 4.8b – Groundwater Depletion or Recharge

Construction – Less-than-Significant Impact

Bay Boulevard Substation

Groundwater is not anticipated to be encountered during construction of the Bay Boulevard Substation because the site would be elevated approximately 10 feet above the existing grade, from approximately 10 feet above mean sea level to a high point of approximately 21 feet above mean sea level. The Proposed Project area would be excavated to a depth of approximately six feet prior to building it up to a higher elevation. Water required for dust control would be obtained from a municipal source and would not affect local groundwater supplies. Any groundwater encountered during construction would not be used for dust control. Further,

construction is not expected to interfere with stormwater infiltration and/or groundwater recharge because the site would be nearly 100 percent pervious during the construction phase. Therefore, impacts to groundwater supplies and recharge would be less than significant.

230 kV Loop-in, 69 kV Relocation, 138 kV Extension, and the South Bay Substation Demolition

Impacts to groundwater supplies and recharge for the 230 kV loop-in, 69 kV relocation, 138 kV extension, and the South Bay Substation demolition would be similar to that identified for the construction of the Bay Boulevard Substation; however, given that the groundwater is relatively shallow in the Proposed Project area and trenching and foundation hole drilling would be required, there is the potential to encounter groundwater during construction of these components. Trenches would be excavated to a depth of approximately three to six feet, wood pole foundation holes would be excavated to a depth of approximately eight to 12 feet, and steel pole foundation holes would be excavated to a depth of approximately 20 to 45 feet. Where localized shallow groundwater is encountered, dewatering systems, as outlined in SDG&E's BMP Manual, may be used to dispose of groundwater. Typically, groundwater would be pumped into frac tanks and either discharged to land in accordance with RWQCB regulations or transported to a nearby sewer inlet with approval from the local wastewater treatment facility owner. In either case, the amount of groundwater withdrawal is expected to be negligible and not have any effect on existing groundwater supplies. Demolition of the South Bay Substation would increase the amount of pervious surfaces at the existing substation site. The existing South Bay Substation currently contains 5.7 percent impervious surfaces. All of the impervious surfaces at the existing South Bay Substation site would be removed from within the fenced facility during construction. Therefore, there would not be a decrease in groundwater infiltration at the site. There would be a negligible increase in permeable surfaces at the existing South Bay Substation site once the equipment pads and foundations are removed. Therefore, impacts to groundwater supplies and recharge from construction of transmission lines and demolition of the South Bay Substation would be less than significant.

Operation and Maintenance – Less-than-Significant Impact

A limited amount of water would be required to allow for long-term operation and maintenance of the Bay Boulevard Substation. Water would primarily be used for irrigation of landscaping, fire protection, and other general operational uses. Water would be obtained from permitted municipal sources that can provide an adequate water supply to the site.

The Proposed Project would involve an increase in the amount of impervious surfaces from construction of the access roads and equipment foundations. There would be an approximate 25 percent increase in impervious surfaces at the Bay Boulevard Substation site when compared to existing conditions within the Proposed Project limits. The asphalt access roads would create approximately 3.2 acres of impervious surfaces and the equipment foundations would create approximately 0.6 acres of impervious surfaces. However, these impervious surfaces would not be contiguous and would be relatively small; therefore, they would not impede groundwater recharge at the site. Furthermore, there are enough pervious surfaces within the Proposed Project site to allow rain water and stormwater runoff to continue to infiltrate the ground surface, similar to pre-construction conditions. As such, operation and maintenance activities would have a less-than-significant impact to existing groundwater supplies, groundwater reserves or recharge capabilities.

Question 4.8c – Drainage Patterns – Erosion/Siltation

Construction – Less-than-Significant Impact

Bay Boulevard Substation

The Bay Boulevard Substation site is relatively flat with less than two percent average slope. A low man-made berm exists along the southerly and westerly site perimeter fence line. The effect of this berm is to generally direct the site runoff northerly to an existing concrete-lined drainage channel at the northwest corner of the LNG property. This drainage channel connects to a concrete-lined drainage ditch on the south end of the South Bay Power Plant property, through which it eventually discharges directly into the San Diego Bay. There is also a defined discharge point to the salt crystallizer ponds at the far southwest corner of the property; however, discharge of typical rain events is impeded at this point by the man-made perimeter berm. It is likely that during larger rainfall events, a portion of the sheet flow discharges from this southwest corner via a breach in the perimeter berm. Localized depressions in the site topography appear to retain some runoff, particularly near the perimeter berm along the southerly and westerly existing fence lines. Additionally, a portion of the Proposed Project site is surrounded by a man-made containment berm that impounds that portion of the site runoff that falls within this containment area after storm events.

Because of the presence of the containment berm, and to a lesser degree the perimeter berm, the current site topography retains a significant portion of the total runoff. This retained runoff is discharged from the site through infiltration and evaporation. In the absence of these man-made berms, the site would naturally drain westerly as sheet flow to the salt crystallizer ponds.

During construction, the Bay Boulevard Substation site would be elevated as depicted in Figure 3-3: Bay Boulevard Substation Conceptual Site Plan in Chapter 3 - Project Description and designed to transport flows to bio-retention basins, vegetated swales, detention basins or a combination of these on the north, east, south, and west sides of the substation site to collect and convey the site runoff. Runoff discharge from the site would follow the existing drainage pattern to the northwesterly corner, and potentially to the southwesterly corner. Minor grading may be required north of the northwesterly property corner to facilitate drainage flow to the existing concrete drainage channel and ultimately to the San Diego Bay, similar to pre-construction conditions.

The runoff coefficient for the site was calculated based on pre- and post-construction conditions. The coefficient for pre-Project conditions at the Bay Boulevard Substation site is likely in the range of 0.37. The coefficient following construction of the Bay Boulevard Substation is likely to be in the range of 0.49.[1] After construction of the Bay Boulevard Substation, the bio-retention and infiltration vegetated swales and basins proposed along the perimeter of the substation site would have sufficient storage capacity to retain or reduce post-construction discharge to a level consistent with pre-construction conditions. Therefore, impacts resulting from altering the existing drainage patterns would be less than significant.

[1] This number may differ from a composite value calculated in the drainage study as it would be calculated from a hydrologic perspective relative to the watershed.

Increased rates of soil erosion could occur at the Bay Boulevard Substation site as previously described in the response to Question 4.8a – Water Quality Standards and Waste Discharge Violations. Stormwater run-on and runoff have the potential to detach and transport soil particles from bare soils and deposit them in nearby waterways, including the adjacent San Diego Bay. Based on the sediment risk determination presented in Table 4.8-1: Sediment Risk Determination, up to 8.5 tons per acre of soil could be lost without the implementation of erosion and sediment controls. However, with adherence to a SWPPP and installation and maintenance of BMPs in accordance with SDG&E's Water Quality Construction BMP Manual, soil erosion and subsequent sedimentation would be eliminated or minimized during construction and no significant soil loss is expected.

Approximately seven of the ten seasonal ponds within the Bay Boulevard Substation site would be permanently impacted. However, the four seasonal ponds located within the detention basin are exempt from wetland regulation because the detention basin was constructed in an upland area and was designed to serve as an industrial stormwater and spill impoundment facility to protect Waters of the U.S. and Waters of the State from potential discharge of contaminated runoff. While the tanks within the former LNG facility have been decommissioned and partially removed, the foundation slabs remain to be removed and the land to be reclaimed. As a result, the facility is still carrying out its intended purpose and has not been abandoned. Thus, the four seasonal ponds in the detention basin are not anticipated to be subject to wetland regulation.

In addition to the seasonal ponds, a road and culvert are planned to be constructed through the existing emergent wetland on the Bay Boulevard Substation site. SDG&E would mitigate for impacted jurisdictional wetlands at a ratio of two to one. Plans for created wetlands at the Proposed Project site are in development. More detailed information on impacts to wetlands is included in Section 4.4 Biological Resources. With the implementation of the applicant-proposed measures (APMs) in Section 4.4 Biological Resources, impacts to wetlands would be less than significant.

230 kV Loop-in, 69 kV Relocation, 138 kV Extension, and the South Bay Substation Demolition

Construction of the transmission lines and demolition of the South Bay Substation would result in temporary impacts to the existing contours and drainage patterns, as well as several of the seasonal ponds. However, upon completion of construction, temporary work areas would be returned to pre-construction contours and elevations and would not alter existing drainage patterns. As previously described for the Bay Boulevard Substation, the potential for erosion during construction exists. However, with the implementation of SDG&E's SWPPP and Water Quality Construction BMP Manual, substantial soil loss is not expected. Therefore, impacts to drainage patterns and erosion and sedimentation would be less than significant.

Operation and Maintenance – No Impact

On-site drainage patterns established during construction would generally remain unchanged with long-term operation and maintenance of the Bay Boulevard Substation. The proposed grading improvements are not anticipated to result in impacts in the form of increased on- or off-site erosion or siltation. As such, no impacts as the result of on-site or off-site drainage patterns are anticipated with operation and maintenance of the facilities.

Question 4.8d – Drainage Patterns – Runoff/Flooding

Construction – Less-than-Significant Impact

As discussed in the response to Question 4.8c – Drainage Patterns – Erosion/Siltation, construction-related activities would result in minor deviations to the existing drainage patterns on site, due to the increase in elevation of the Bay Boulevard Substation. Such changes would not substantially increase the existing velocity or volume of stormwater flows either on site or in off-site areas. As such, flow rates and volumes would not be substantially altered and potential impacts from runoff or flooding would be less than significant.

Operation and Maintenance – No Impact

Once construction of the Proposed Project facilities and associated improvements has been completed, no additional changes to on-site or off-site drainage are anticipated. The Proposed Project would not result in the potential for increased runoff volumes, and stormwater facilities in the surrounding area would not be further affected. Therefore, no impact resulting from stormwater runoff or flooding is anticipated with operation and maintenance of the Bay Boulevard Substation.

Question 4.8e – Stormwater Runoff

Construction – Less-than-Significant Impact

Bay Boulevard Substation

The enclosed area of the Bay Boulevard Substation would occupy approximately 10 acres. Development of the site would require compaction of soils to meet engineering standards and asphalt roads would be constructed to access substation equipment. In general, compaction increases surface runoff when all other factors, such as slope steepness and slope length, remain the same. Although the majority of the site would remain pervious, the foundations and access roads would add impervious surfaces. Because the foundations would not be contiguous and would drain within the confines of the substation limits, runoff from the site is not expected to change substantially from pre-construction conditions. Consequently, there would be a less-than-significant impact to existing stormwater conveyance systems.

Construction would introduce new sources of pollutants that could enter stormwater and be transported off site. Sources of pollutants are discussed in detail in response to Question 4.8a – Water Quality Standards and Waste Discharge Violations. They would include hazardous materials, such as diesel fuel, hydraulic fluid, oil and grease, as well as typical construction materials, sediment, and trash. With implementation of the Proposed Project's SWPPP, impacts associated with the introduction of pollutants to stormwater runoff would be less than significant.

230 kV Loop-in, 69 kV Relocation, 138 kV Extension, and the South Bay Substation Demolition

Impacts resulting from stormwater runoff from construction of the 230 kV loop-in, 69 kV relocation, 138 kV extension, and demolition of the South Bay Substation would be similar to those previously described for the Bay Boulevard Substation. Since limited grading is required to install transmission poles and trenching is required to construct the duct banks, the volume of stormwater during construction is expected to be the same as it was prior to construction. Pre-construction contours and elevations would be returned following the completion of

construction; therefore, stormwater runoff is anticipated to remain unchanged when compared to pre-construction conditions. Implementation of the SWPPP and installation and maintenance of BMPs in accordance with SDG&E's Water Quality Construction BMP Manual would minimize or eliminate sources of pollution. Therefore, impacts would be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Surface runoff following the completion of construction is expected to be similar to the existing conditions due to a minimal amount of new impermeable surfaces. No impacts would occur to existing stormwater conveyance systems and no alterations of existing culverts, catch basins, or drains would be required to accommodate the Proposed Project during the operation and maintenance phase. Steel poles, conductor, and substation equipment would be exposed to stormwater; however, these materials are not readily soluble or considered to contribute to water quality degradation.

Maintenance activities such as routine inspections, pole replacements, and conductor work, can introduce pollutants to the site, similar to those during construction. Any material or equipment needed to make a repair would be brought to the site and then returned to an SDG&E maintenance yard upon completion. In addition, SDG&E would implement standard protocols in accordance with state and federal regulations to control, contain, clean up, and dispose of any pollutants that may occur during maintenance activities.

Fertilizers and soil amendments may be used to facilitate plant growth around the perimeter of the site or in accordance with the landscaping plans. Fertilizers or other soil amendments would be used according to the manufacturer's specifications and in quantities that minimize the potential to reach nearby waterways. As a result, impacts from stormwater runoff would be less than significant.

Question 4.8f – Water Quality Degradation – *Less-than-Significant Impact*

Potential sources of pollutants and activities that can contribute water quality degradation are discussed in detail in response to question 4.8a – Water Quality Standards and Waste Discharge Violations. No other foreseeable sources of pollution are anticipated to be associated with construction or operation of the Proposed Project. As a result, impacts would be less than significant.

Question 4.8g – Housing in Flood Hazard Areas – *No Impact*

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

Question 4.8h – Structures in Flood Hazard Areas – *No Impact*

According to the FEMA Flood Plain Map, the Bay Boulevard Substation site, 230 kV loop-in, 69 kV relocation, 138 kV extension, and the existing South Bay Substation are located outside of the 100-year flood hazard boundary. No new structures would be constructed that would impede or redirect flood flow within a 100-year flood hazard area. As a result, the Proposed Project would not result in any impacts associated with flood zones.

Question 4.8i – Flood Exposure – *No Impact*

Proposed Project construction would not expose people or structures to a significant risk of loss, injury, or death due to flooding, as no on- or off-site flood impacts are expected, as described in the response to Question 4.8h – Structures in Flood Hazard Areas. No permanent buildings would be placed in a known 100-year flood hazard area. Thus, no impacts would occur.

Question 4.8j - Flooding, Seiche, Tsunami, and Mudflow – *Less-than-Significant Impact*

The Proposed Project area is located adjacent to the San Diego Bay—a large body of water with access to the Pacific Ocean—which is susceptible to tsunamis. Given the distance from the Pacific Ocean and the elevation of the proposed substation, it is unlikely that a tsunami would cause catastrophic damage to the substation. Because the substation would be unmanned and does not involve housing, impacts that would result from a tsunami are expected to be less than significant.

Seiches are typically associated with impounded waterbodies. The Bay Boulevard Substation would not be located near any lakes or other impounded waterbodies; therefore, no impact from seiches would occur.

A mudflow is a flow of soil and debris that occurs after intense rainfall, earthquakes, or severe wildfires. The potential for a mudflow to occur depends on the slope steepness, soil type, and soil moisture content. Given that the Proposed Project area is nearly flat, a mudflow would not occur. Therefore, no impact is anticipated.

4.8.4 Applicant-Proposed Measures

With the implementation of the Proposed Project's SWPPP and SPCC Plan, which are both required by law, as well as SDG&E's Water Quality Construction BMP Manual, the Proposed Project would result in a less-than-significant impact to hydrology and water quality. Therefore, no further APMs are proposed.

4.8.5 References

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