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LIST OF APPENDICES

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5.9 HYDROLOGY AND WATER QUALITY

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Violate any other water quality standards or waste discharge requirements?	☐	☐	☑	☐
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☑	☐
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?	☐	☐	☑	☐
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.	Expose people or structures to inundation by seiche, tsunami or mud flow?	☐	☐	☑	☐

5.9.1 Introduction

This section of the PEA presents information about surface water and groundwater and an analysis of potential impacts to hydrology and water quality from construction, operation, and maintenance of the Proposed Project. The Proposed Project would result in less than significant impacts to hydrology and water quality with implementation of the Proposed Project's SWPPP, which is required by the State NPDES General Permit for stormwater discharges from construction sites, as well as implementation of SDG&E's *BMP Manual for Water Quality Construction and Operational Protocols in the SDG&E Subregional NCCP*.

5.9.2 Methodology

The hydrology and water quality in the Proposed Project area were evaluated by reviewing aerial photographs, US Geologic Survey maps, FEMA maps for flood zones, *San Diego County Multi-Jurisdiction Hazard Plan* maps, City and County General Plans, the California 2012 303(d) List of impaired waters for RWQCB Region 9, the RWQCB *Water Quality Control Plan for the San Diego Basin (9)*, Department of Water Resources *Bulletin No. 106-2*, and Department of Water Resources online files for groundwater wells and quality. In addition, an aquatic resource survey for jurisdictional waters was completed for the Proposed Project.

5.9.3 Existing Conditions

In California, the regulation, protection and administration of state water quality are carried out by the SWRCB and nine California RWQCBs. The Proposed Project is located within the San Diego Region governed by the San Diego RWQCB, which implements policies and programs that protect the quality of the regional water bodies. These programs include preserving the existing water quality, enhancing water quality, and protecting the beneficial uses of regional water bodies, as defined in the *Water Quality Control Plan for the San Diego Basin (9).* The San Diego Region includes most of San Diego County, parts of southwestern Riverside County and southwestern Orange County and is divided into major Hydrologic Units (HUs). The Proposed Project is located in the San Dieguito HU, except for the Rancho Carmel Substation. The Rancho Carmel Substation is located partially in the Peñasquitos HU.

5.9.3.1 Regulatory Background

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

Federal

Clean Water Act

The CWA (33 USC Section 1251 *et seq.*), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges into surface water. Those discharges are regulated by the NPDES permit process (CWA Section 402). The Proposed Project is under the jurisdiction of the San Diego RWQCB.

Section 401 of the Clean Water Act

Section 401 of the CWA requires that any applicant for a federal permit for an activity that may result in a discharge of pollutants into waters of the United States obtain a certification that the activity complies with all applicable water quality standards, limitations, and restrictions. A federal agency cannot issue a license or permit for this activity without a Section 401 certification. For the Proposed Project area, the San Diego RWQCB issues Section 401 certifications. The Proposed Project is not anticipated to discharge into waters of the United States and no federal permit is required for the Proposed Project. Therefore, Section 401 of the CWA would not apply.

Section 404 of the Clean Water Act

Under Section 404 of the CWA, the USACE regulates the discharge of dredged and/or fill material into waters of the United States. Waters of the United States include navigable waterways and wetlands adjacent to navigable waterways, and non-navigable waterways and wetlands adjacent to non-navigable waters that are contiguous with navigable waterways. The term "waters of the United States" is defined by 33 CFR Part 328.3 and currently includes (1) all navigable waters (including all waters subject to the ebb and flow of the tide), (2) all interstate waters and wetlands, (3) all other waters (e.g., lakes, rivers, intermittent streams) that could affect interstate or foreign commerce, (4) all impoundments of waters mentioned above, (5) all tributaries to waters mentioned above, (6) the territorial seas, and (7) all wetlands adjacent to waters mentioned above. Refer to the Aquatic Resource Summary Report in Appendix C of the Artesian Substation Biological Technical Report (PEA Appendix 5.4-A) for a complete description of the USACE jurisdictional limits. As described in the Aquatic Summary Report, the Proposed Project would not require a Section 404 permit since it would not discharge dredge or fill material into waters of the United States.

Nationwide Permits

Nationwide Permits are general Section 404 permits issued by USACE for categories of activities that have minimal impact on aquatic resources and meet certain conditions. Nationwide Permit 12, Utility Line Activities, authorizes activities required for the construction, maintenance, repair and removal of utility lines and associated facilities in waters of the United States, provided the activities do not result in the loss of greater than one-half acre of waters of the United States for each single and complete project. Nationwide Permit 12 requires a preconstruction notification to the USACE district engineer before beginning the activity if the proposed activity results in discharges that result in the loss of greater than one-tenth acre of waters of the United States. If any activity associated with the Proposed Project affects waters of the United States, the activity would be carried out under Nationwide Permit 12 because the discharges from the Proposed Project would not result in the loss of greater than one-half acre of waters of the United States. The Aquatic Resource Summary Report identifies USACE jurisdictional areas that occur within the Proposed Project area.

National Flood Insurance Program

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies. 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. FEMA allows non-residential development in floodplains, but 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 CFR Title 44, Part 60 and enable 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

Streambed Alteration Agreements

California Fish and Game Code Sections 1600–1616 require any person, state or local government agency, or public utility to notify the CDFW before beginning any activity that will substantially modify a river, stream or lake. Notification to CDFW through the Section 1602 Streambed Alteration Agreement process is required for a project that will:

- Substantially divert or obstruct the natural flow of any river stream or lake;
- Substantially change or use any material from the bed, channel, or bank of, any river, stream or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flake, or ground pavement where it may pass into any river, stream or lake.

The Aquatic Resource Summary Report appended to the Biological Technical Report (PEA Appendix 5.4-A) identifies CDFW jurisdictional areas that occur within the Proposed Project area. No activities are proposed that would require notification to CDFW under these sections.

California Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967, Water Code Section 13000 *et seq.*, requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for the Proposed Project area are contained in the *Water Quality Control Plan for the San Diego Basin (9)*. Applicable constraints in the water quality control plans relate primarily to the avoidance of altering the sediment discharge rate of surface waters, and the avoidance of introducing toxic pollutants to the water resource. A primary focus of water quality control plans is to protect designated beneficial uses of waters, which range from drinking water quality to recreation and wildlife habitat. In addition, any party proposing to discharge waste that could affect the quality of the waters of the state must make a Report of the Waste Discharge (ROWD) to the RWQCB or SWRCB as appropriate, in compliance with Porter-Cologne.

The San Diego RWQCB has the authority to waive the requirements that a person file a ROWD and/or be issued Waste Discharge Requirements (WDRs) prior to initiating a discharge to surface waters not subject to federal NPDES regulations. Specifically, Section 13269 of the Porter-Cologne Water Quality Control Act (Water Code) gives the San Diego RWQCB the authority to waive the requirements of Water Code Sections 13260(a) and (c), 13263(a), and 13264(a) for specific discharges or specific types of discharge, provided the waiver is consistent

with the *Water Quality Control Plan for the San Diego Basin (9)* and is in the public interest. A waiver is available for a discharge if the discharge can comply with the conditions of the waiver. Discharges that comply with the conditions of a waiver are expected to pose a low threat to the quality of waters of the state.

RWQCB Conditional Waiver No. 2 – "Low Threat" Discharges to Land

RWQCB Conditional Waiver No. 2 is for "low threat" discharges to land, which are contained on-site and allowed to percolate to groundwater. "Low threat" discharges include liquid wastes containing pollutant concentrations that are not expected to adversely impact the quality of waters of the state. To ensure compliance with surface and groundwater quality objectives, permittees must comply with both general and specific conditions of the waiver.

Temporary uses of tertiary-treated recycled water for allowed construction activities can be permitted by obtaining coverage under this waiver. The activities can include dust control, soil compaction, concrete mixing, and/or housekeeping (e.g., street sweeping) if allowed within applicable Master Reclamation Permits, WDRs or Water Reclamation Requirements (WRR).

Discharges from low-volume and short-term construction dewatering operations to land also may be eligible for Conditional Waiver No. 2.

NPDES – Construction General Permit

The NPDES permit program was authorized by the CWA and is administered in California by the SWRCB through the nine RWQCBs. The purpose of the NPDES permit program is to control the discharge of pollutants from point sources into waters of the United States. The SWRCB has issued a General Permit for Stormwater Discharges Associated with Construction and Land Disturbance (Construction General Permit, Order No. 2009-0009) under the NPDES permit program. The Construction General Permit applies to construction activities in California that disturb one acre or greater of soil, or activities that disturb less than one acre but are part of a larger common plan of development or sale. To obtain coverage under the Construction General Permit, the project applicant must submit Permit Registration Documents, including a Notice of Intent, to the SWRCB and develop a SWPPP that complies with the Construction General Permit requirements. The project applicant must also receive a SWRCB-issued Waste Discharger Identification number before starting construction activities. The project applicant must implement the SWPPP during construction, including requirements for inspections and monitoring, BMPs, and must revise the SWPPP and implement revisions as needed to protect stormwater quality.

The SWPPP describes:

- The project location, site features, area of disturbance, dates of construction, and the identification of materials and activities that may result in pollutant discharges;
- BMPs to implement during construction. The BMPs are selected to control erosion, discharge of sediments, and other potential impacts associated with construction activities;
- An inspection and maintenance program for BMPs; and

- A sampling and analysis plan for monitoring pollutant discharges to water bodies, if required.

The project applicant must submit a Notice of Termination (NOT) to the SWRCB after completing a project subject to the Construction General Permit in order to be relieved of the permit requirements. Final soil stabilization throughout the project area must be achieved before the SWRCB will approve the NOT.

Water Quality Control Plan for the San Diego Basin (9)

The Water Quality Control Plan for the San Diego Basin (9) (Basin Plan) designates beneficial uses for surface and groundwater and sets narrative and numerical objectives for protection of the beneficial uses. The Basin Plan was prepared in accordance with the criteria in Porter-Cologne and other pertinent state and federal rules and regulations. Beneficial use designations for surface water in the Proposed Project area include: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), Industrial Process Supply (PROC), Contact Water Recreation (REC-1), Non-contact Water Recreation (REC-2), Warm Freshwater Habitat (WARM), and Wildlife Habitat (WILD). Beneficial use designations for ground water in the Proposed Project area include: MUN, AGR, and IND.

The Basin Plan includes a general anti-degradation water quality objective to maintain water quality that is better than stated objectives. The Basin Plan has specific inland water quality objectives for water temperature, agricultural supply beneficial use, ammonia, bacteria, biostimulatory substances (e.g., nitrogen and phosphorus), boron, chlorides, color, dissolved oxygen, floating material, fluoride, pH, inorganic chemicals, iron, manganese, methylene blue active substances (e.g. surfactants), nitrate, oil and grease, organic chemicals, sodium, pesticides, phenolic compounds, radioactivity, drinking water, sediment, suspended solids, sulfate, taste and odor, total dissolved solids, toxicity, toxic pollutants, trihalomethanes, and turbidity. There are also specific groundwater objectives listed by groundwater basin.

Wildlife habitat, municipal, industrial, and agricultural supplies, and recreation are among the beneficial uses that the objectives seek to protect. The quality of surface water is affected by stormwater runoff and discharges from industrial, commercial, agricultural, and residential activities in the region. The San Diego RWQCB uses permits and other programs to regulate and reduce pollution of surface waters.

The supply and use of recycled water in California is regulated by the California Department of Public Health (CDPH), and application of recycled water to land is regulated by the SWRCB. The CDPH regulates recycled water supply and use under the California Safe Drinking Water Act (Health and Safety Code Section 116270 *et seq.*) and Water Recycling Law (Water Code Section 13500 *et seq*.). The Water Recycling Law required CDPH to establish uniform statewide recycling criteria for recycled water for protection of public health. CDPH regulations for recycled water are included in CCR Titles 17 and 22. Title 17 provides protective requirements to prevent cross-connection of recycled and potable water systems. Title 22 Division 4, Chapter 3 (60301 *et seq*.) establishes statewide water recycling criteria for recycled water quality and use. On June 7, 2016 the SWRCB adopted the proposed WRRs for Recycled Water Use. This permit will be effective August 6, 2016 and replaces the existing statewide WDRs for Recycled Water Use (Order WQ 2014-0090-DWQ). Depending upon availability of supply, the Proposed Project

may use recycled water for dust control, soil compaction, concrete mixing and/or housekeeping during construction. Any temporary and/or permanent use of tertiary-treated recycled water for the Proposed Project would occur in compliance with this newly adopted statewide permit (WRR) for Recycled Water Use, or the San Diego RWQCB Waiver #2. Discharges of recycled water from the Proposed Project to waters of the U.S, waters of the State and/or the Municipal Separate Storm Sewer System (MS4) would be prohibited under the WRR or Waiver #2.

Local

Because the California Public Utilities Commission has exclusive jurisdiction over the siting, design, and construction of the Proposed Project, the Proposed Project is not subject to local discretionary land use regulations. The following analysis of the local regulations relating to hydrology and water quality is provided for informational purposes. As outlined in the following subsections, the construction and operation of the Proposed Project will not conflict with any environmental plans, policies, or regulations related to hydrology and water quality.

City of San Diego Municipal Codes for Stormwater Management and Discharge Control and Stormwater Runoff and Drainage Regulations

The City of San Diego Municipal Code's *Stormwater Management and Discharge Control Ordinance* is found in Division 3 of Article 3 of Chapter 4 and was originally adopted in September 1993 with amendments in 2001 and 2008. The stated intent of the ordinance is to protect and enhance the water quality of watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Federal Water Pollution Control Act [CWA, 33 U.S.C. section 1251 *et seq*.] and NPDES Permit No. CA0108758, as amended.

The ordinance contains discharge prohibitions and exemptions from those provisions. The ordinance sets out requirements to comply with the ordinance, including BMPs, plan and permit compliance requirements, and responsibilities for the protection of stormwater conveyance systems. The ordinance defines the requirements that are legally enforceable by the City.

Division 2 of Article 2 of Chapter 14, *Stormwater Runoff and Drainage Regulations*, states that all stormwater runoff control, drainage, and flood control facilities shall be constructed in accordance with standards established in the *Land Development Manual,* and shall comply with Municipal Code Chapter 4, Article 3, Division 3 (*Stormwater Management and Discharge Control*). The following is required by the regulation:

> All development shall be conducted to prevent erosion and stop sediment and pollutants from leaving the property to the maximum extent practicable. The property owner is responsible to implement and maintain temporary and permanent erosion, sedimentation, and water pollution control measures to the satisfaction of the City Manager, whether or not such measures are a part of approved plans. The property owner shall install, monitor, maintain, and revise these measures, as appropriate, to ensure their effectiveness.

City of San Diego Land Development Manual

The *Land Development Manual* provides information to assist in the processing and review of applications. Appendix O of the *Land Development Manual* includes the stormwater standards for the City of San Diego. The stormwater standards provide information to applicants that are processed through the City's Development Services Department. It provides guidance on the selection, design, and incorporation of BMPs into project design.

City of San Diego General Plan

The *City of San Diego General Plan* provides direction for future growth within the city limits, and provides policies related to various elements including land use, urban design, public facilities, and conservation.

The *City of San Diego General Plan* contains the following relevant policies:

CE-B.4. Limit and control runoff, sedimentation, and erosion both during and after construction activity.

CE-D.2. Protect drinking water resources by implementing guidelines for future development that may affect water supply watersheds, reservoirs and groundwater aquifers. The guidelines should address site design, BMPs and stormwater treatment measures.

a) Collaborate with other jurisdictions to reduce the potential for polluted runoff to water supply reservoirs.

CE-E.7. Manage floodplains to address their multi-purpose use, including natural drainage, habitat preservation, and open space and passive recreation, while also protecting public health and safety.

San Diego County Multi-Jurisdiction Hazard Mitigation Plan

The *San Diego County* MJHMP is a countywide plan that identifies risks and ways to minimize damage by natural and manmade disasters, consistent with the Federal Disaster Mitigation Act of 2000. The Disaster Mitigation Act establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program. Section 322 of Disaster Mitigation Act of 2000 specifically addresses mitigation planning at the state and local levels.

The MJHMP is intended to serve many purposes; including helping County residents better understand the natural and manmade hazards that threaten public health, safety, and welfare; economic vitality. The MJHMP also highlights the operational capability of important institutions. The MJHMP includes relevant hazard profiles for tsunamis, dam failure, flooding, and rain-induced landslides.

Other Applicable Plans

SDG&E Construction Water Sourcing Investigation Plan

This plan provides an overview of potential water sources available within the SDG&E service territory and is utilized by SDG&E to determine the most appropriate source(s) of water for project construction and operations phases. The plan outlines the regulatory requirements for sourcing, procuring and using water from various sources (e.g., water districts, surface water diversions, groundwater wells, etc.). The plan is an internal reference document used to assist SDG&E in conserving potable water resources and selecting alternative water sources (e.g., recycled water) whenever and wherever feasible for both construction and operations components of approved projects.

SDG&E Subregional Natural Community Conservation Plan

Under Section 10(a) of the federal Endangered Species Act, SDG&E developed a comprehensive multiple species and habitat NCCP to effectively preserve and enhance covered sensitive species and their native habitats during operation, maintenance, and expansion of its electric and natural gas transmission system (16 U.S.C. § 1539). The purpose of the NCCP is to establish and implement a long-term agreement between SDG&E, the U.S. Fish and Wildlife Service, and the CDFW for the preservation and conservation of sensitive species and their habitats while allowing SDG&E to develop, install, maintain, operate, and repair its facilities as necessary to provide energy services to customers within SDG&E's service area.

The NCCP identifies 69 Operational Protocols designed to avoid and minimize potential impacts to sensitive (i.e., special-status) species and their habitats, including sensitive hydrological features. These features include drainages, wetlands, and vernal pools. The NCCP is used to comply with the state and federal Endangered Species Act (ESA) and will not be used for construction of the Proposed Project, but will be used for operation and maintenance of the Proposed Project. Specific Operational Protocols will be implemented to ensure that impacts to special-status species and their habitats are avoided or minimized.

SDG&E's BMP Manual

SDG&E's *BMPs Manual for Water Quality Construction* (BMP Manual) organizes and presents SDG&E's standard water quality protection procedures for various specific actions that routinely occur as part of SDG&E's ongoing construction, operations, and maintenance activities. The primary focus of most BMPS is the reduction and/or elimination of potential water quality impacts during construction of linear projects such as the Proposed Project. The BMPs described within the BMP Manual were derived from several sources including the State of California guidelines as well as the Caltrans Water quality BMPs. The BMP Manual will be utilized during construction (by way of preparation and implementation of the SWPPP), operation, and maintenance of the Proposed Project to ensure compliance with all relevant SDG&E and government-mandated regulatory water quality standards. A copy of the latest revision of the BMP Manual is provided in Appendix 5.9-A.

5.9.3.2 Hydrology and Water Quality Setting

Jurisdictional Resources

The Aquatic Resource Summary Report appended to the Biological Technical Report (PEA Appendix 5.4-A) identifies jurisdictional waters and wetlands that occur within the Proposed Project area. As designed, the Project avoids impacts to waters and wetlands under jurisdiction of the USACE, RWQCB and CDFW.

Watersheds

The Proposed Project footprint ranges in elevation from approximately 500 to 800 feet above mean sea level. Except for the Rancho Carmel Substation work, the Proposed Project is in the San Dieguito HU which encompasses approximately 350 square miles including the San Dieguito River and its tributaries extending from Del Mar to near Julian. Most of the Proposed Project occurring in the San Dieguito HU is adjacent to an unnamed tributary to the San Dieguito River which flows generally west on the north side of Camino Del Norte and Camino Del Sur before turning northward and entering the San Dieguito River downstream of Lake Hodges. The San Dieguito River flows generally westward to the San Dieguito Lagoon where it meets the Pacific Ocean.

The Rancho Carmel Substation is located marginally within the drainage divide of the Peñasquitos HU. The Peñasquitos HU is approximately 170 square miles extending from La Jolla to Poway and is drained by several creeks. The substation is in the watershed of an unnamed tributary to Peñasquitos Creek. Peñasquitos Creek flows generally westward to the Peñasquitos Lagoon where it meets the Pacific Ocean.

The drainages in the Proposed Project area are fed by direct precipitation, stormwater and urban runoff. The stream flows in the area of the Proposed Project are ephemeral and tend to become active after rainfall. Weather in the Proposed Project area is characterized by mild, wet winters and mild, dry summers. Drainages are shown in Figure 5.9-1, Impaired Waters Map. The unnamed drainages in the Proposed Project area are not identified as water quality impaired but they are tributaries to impaired waters (SWRCB, 2012). The San Dieguito River is listed as water quality limited for enterococcus, fecal coliform, nitrogen, phosphorous, total dissolved solids, and toxicity from unknown sources. Peñasquitos Creek is listed as water quality limited for enterococcus, fecal coliform, nitrogen, selenium, total dissolved solids, and toxicity from unknown sources.

Ground Water

The Proposed Project area does not overlie any ground water basin (Department of Water Resources, 1967). The Proposed Project area is underlain mostly by Tertiary Period and older rocks that are lithified with generally low primary permeability that does not yield substantial water to wells, but seepage of ground water into excavations can occur from fractures. The depth to water in fractures is localized and dependent on precipitation and anthropogenic influences. Ground water seepage was encountered in one geotechnical boring completed near the Artesian Substation at a depth of 42 feet below the ground surface in Tertiary Period Friars Formation sandstone (Geocon, 2012). The Quaternary Age alluvium in the Proposed Project area (Refer to Figure 5.6-1) is permeable and capable of transmitting ground water. Ground

water can occur at shallow depth in the alluvium in response to seasonal precipitation but the area is near the top of the watershed so alluvial deposits are limited. Groundwater quality within the Peñasquitos and San Dieguito HUs in the vicinity of the Proposed Project site is generally rated as suitable to marginal for domestic purposes and suitable to inferior for irrigation purposes.

Floodplains

Both the Bernardo Substation and the Rancho Carmel Substation are located near drainage divides where no flood zones occur in the vicinity. One area mapped as being within the 1 percent annual chance flood zone occurs in the Proposed Project alignment where existing structure E09 would be utilized in place for the reconductored line (refer to Figure 5.9-2, FEMA Flood Zone Map). The rest of the Proposed Project area is outside of the flood zones.

Precipitation

Most rain fall in the region occurs from November to April. The mean annual precipitation in the Proposed Project area is between 14 and 15 inches (DWR, 1967).

Dam Failure Inundation Areas

Dam owners submit inundation maps to the OES for review and approval in accordance with guidance issued by OES. The OES is responsible for the identification of inundation areas for dam failures in California and provides city and county emergency services coordinators with approved maps of dam failure inundation areas. The Proposed Project is not located within an identified inundation area for dam failure.

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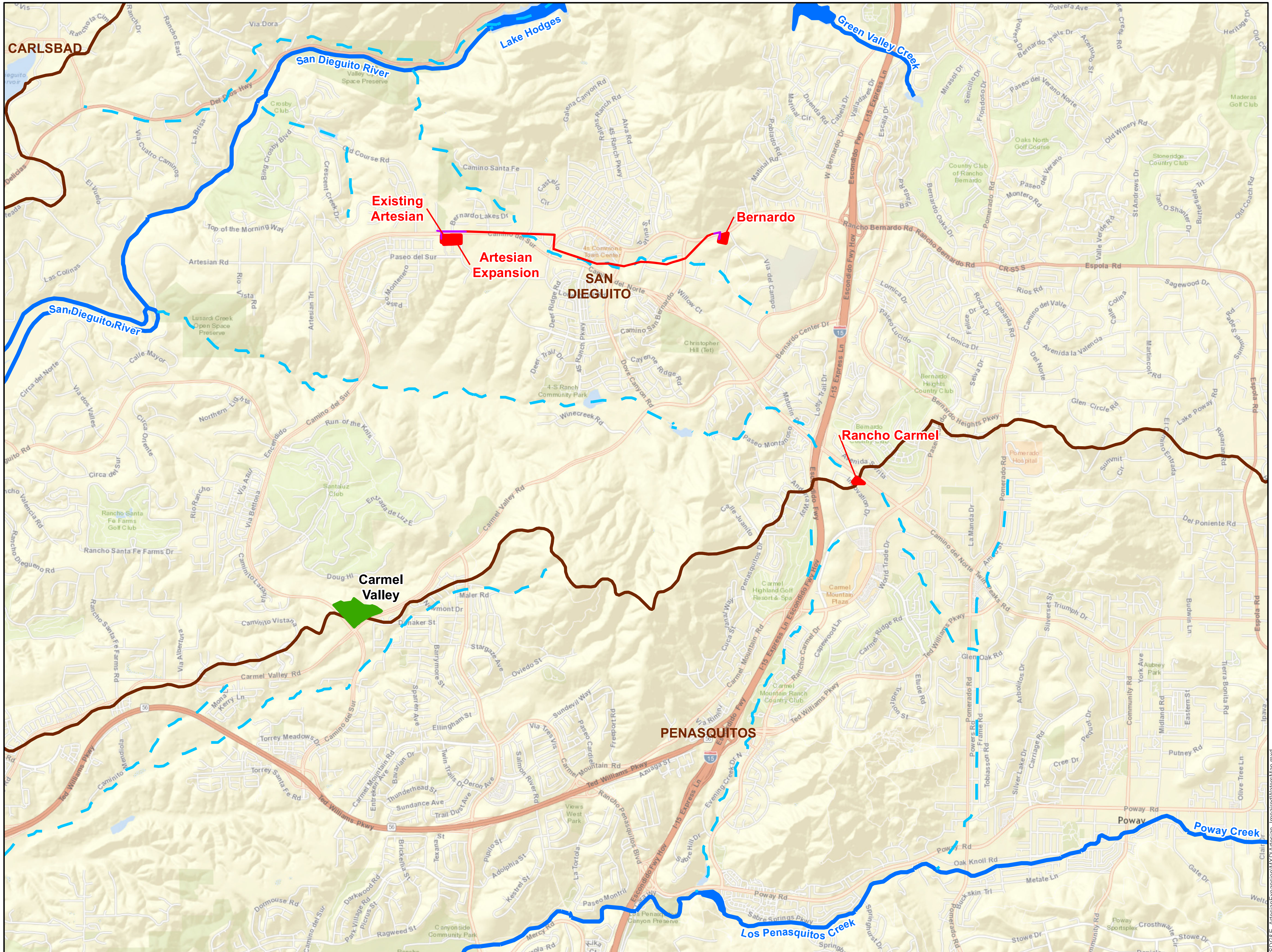
Artesian 230kV Substation Expansion Project
Imparied Waters Map
Figure 5.9-1



Project Features

- 69kV Reconductor
- Remove from Service
- Staging / Storage Yard
- Artesian Expansion & Other Project Areas

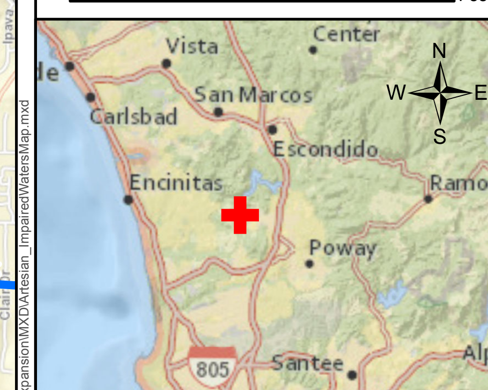
Hydrologic Features

- Stream
- Impaired Waters
- Impaired Waterbody
- Hydrologic Unit

TRC SDGE A Sempra Energy utility

7/29/2016

0 2,000 4,000 6,000 8,000 Feet



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BACK OF FIGURE 5.9-1

Artesian 230kV Substation Expansion Project

FEMA Flood Zones Map

Figure 5.9-2

Project Features

- Project Structure
- 69kV Reconductor
- New 230kV Loop-in
- Remove from Service
- New 69kV Underground Getaway
- Artesian Expansion
- Other Project Areas

Flood Hazard Zones

- Area of Minimal Flood Hazard
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Regulatory Floodway

Bernardo

E09

Artesian Expansion

Existing Artesian

TRC

SDGE A Sempra Energy utility

7/29/2016

0 800 1,600 2,400 Feet

G:\SDG&E_ArtesianExpansion\MXD\Artesian_FEMAMap.mxd

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.; TRC, 2015; SDG&E, 2015; FEMA, 2015

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BACK OF FIGURE 5.9-2 (SHEET 1 OF 3)

Artesian 230kV Substation Expansion Project

FEMA Flood Zones Map

Figure 5.9-2

Sheet 2 of 3

Project Features

- Project Structure
- New Cable in Existing Conduit
- Other Project Areas

Flood Hazard Zones

- Area of Minimal Flood Hazard
- 1% Annual Chance Flood Hazard
- Regulatory Floodway

TRC

SDGE A Sempra Energy utility

7/29/2016

0 800 1,600 2,400 Feet

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.; TRC, 2015; SDG&E, 2015; FEMA, 2015

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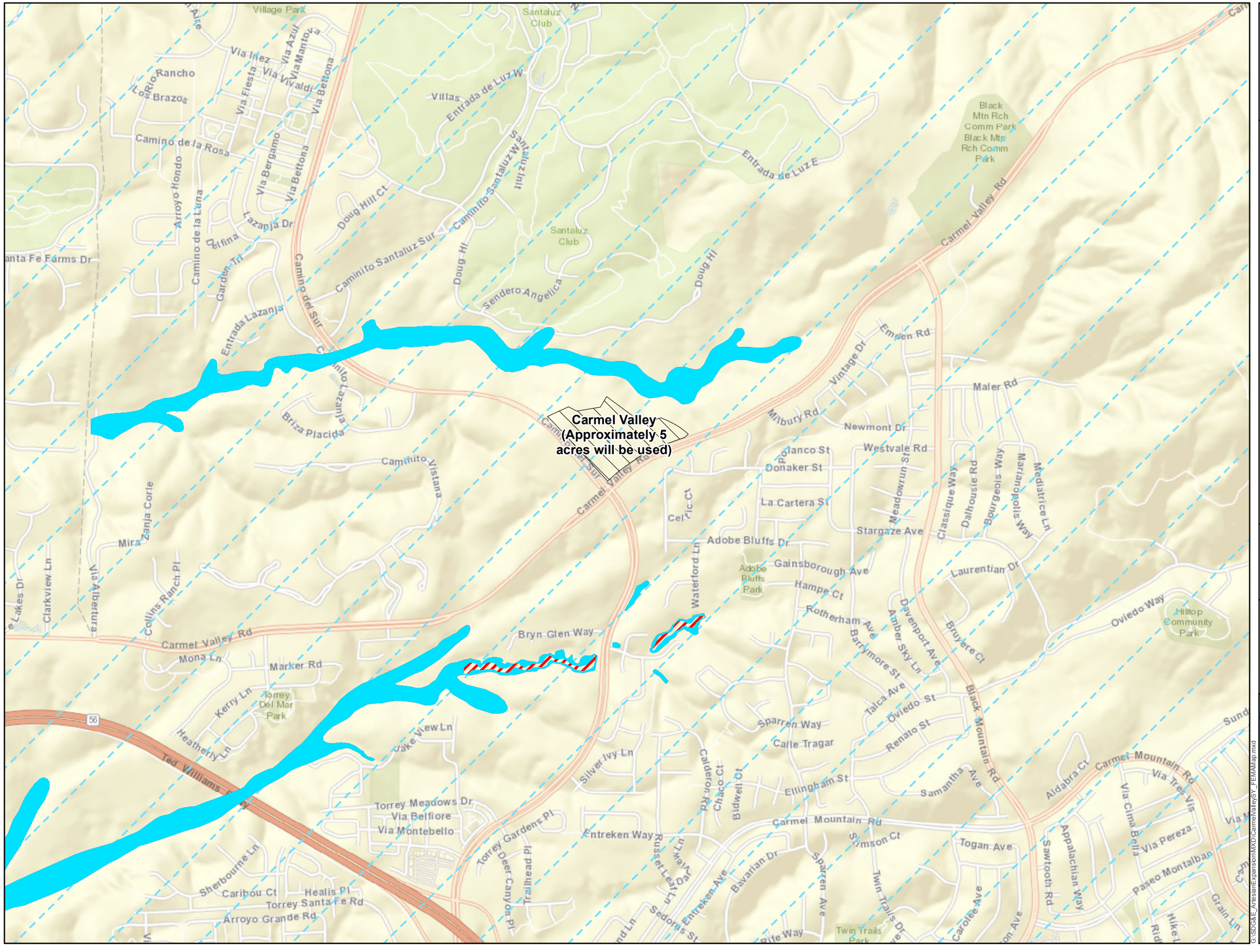
BACK OF FIGURE 5.9-2 (SHEET 2 OF 3)

Artesian 230kV Substation Expansion Project

FEMA Flood Zones Map

Figure 5.9-2

Sheet 3 of 3



Project Features

Staging / Storage Yard

Flood Hazard Zones

Area of Minimal Flood Hazard

1% Annual Chance Flood Hazard

Regulatory Floodway

TRC

SDGE A Sempra Energy utility

7/29/2016

0 800 1,600 2,400 Feet

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.; TRC, 2015; SDG&E, 2015; FEMA, 2015

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BACK OF FIGURE 5.9-2 (SHEET 3 OF 3)

5.9.4 Potential Impacts

This section describes potential impacts to hydrology and water resources as a result of the Proposed Project. Potential impacts would be less than significant through project design, compliance with regulatory requirements for protection of surface water quality, and implementation of the SWPPP and stormwater BMPs.

5.9.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to hydrology and water quality if it would:

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

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;

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

e) Create or contribute runoff water which 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 structures within a 100-year flood hazard area which would impede or redirect flood flows;

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

j) Expose people or structures to inundation by seiche, tsunami, or mud flow.

5.9.4.2 Question 9a - Violate any water quality standards or waste discharge requirements?

Construction – Less than Significant Impact

As detailed below, the Proposed Project would implement a SWPPP with BMPs designed to ensure that stormwater quality standards and waste discharge requirements are met.

As described in Section 5.9.3.2, the Proposed Project occurs in watersheds of unnamed drainages that contribute to waters listed as water quality impaired. The Proposed Project does not have the potential to emit most of the listed pollutants impairing these waters (refer Section 5.9.3.2). However, if not properly managed, Proposed Project construction could potentially contribute some of the listed pollutants including nitrogen, phosphorous and total dissolved solids (TDS)). Any substantial contribution of these pollutants to waters where they are a listed pollutant for impairment would be considered a significant impact.

Construction of the Proposed Project has the potential to affect surface water quality. Construction would use mechanized equipment requiring fuels and lubricants and involve fabrication of structures that require hazardous materials such as coatings, adhesives, and solvents. Construction also generates trash and debris. Saw cutting of pavement for the underground areas could result in potential pollutant discharge to stormwater conveyance facilities along the road. Construction materials such as concrete and drilling mud could impact water quality if released. Dewatering of trenches along the underground segment could be required if water accumulates during construction. In addition, construction would disturb soil surfaces and would locally modify soil grades. This would create a temporary potential for erosion and sediment transport. Overuse of fertilizer for revegetation of disturbed surfaces could contribute to loading of nitrogen and phosphorous. To protect water quality and address all these factors, BMPs would be implemented to address any potential impacts created by the Proposed Project.

The Proposed Project would disturb more than one acre and therefore requires coverage under the statewide Construction General Permit. SDG&E would obtain coverage under the Construction General Permit and comply with its relevant requirements, including development and implementation of a SWPPP and BMP plan for water quality protection.

The Linear Underground/Overhead Project (LUP) requirements of the Construction General Permit would apply to the Proposed Project. LUP activities covered under the Construction General Permit include, but are not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, poles, cables, wires, connectors, switching equipment, regulating equipment, transforming equipment, and associated ancillary facilities). These activities include, but are not limited to, underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access roads, pole/tower pads, cable/wire pull stations, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, welding, concrete and/or pavement repair or replacement, and stockpile borrow locations.

The Construction General Permit requires prevention of unauthorized discharges and implementation of a SWPPP with BMP guidance to prevent discharges from construction activities that would otherwise cause or contribute to any violation of water quality standards. The Construction General Permit further requires inspections, monitoring, and reporting to ensure that BMPs are implemented effectively and modified if needed to ensure protection of water quality. SDG&E would implement BMPs consistent with the Construction General Permit requirements and it's *BMP Manual* (SDG&E 2011). Specific requirements for LUPs are provided in the Order and Attachment A of the Construction General Permit (Order No. 2009-0009). The *SDG&E Subregional NCCP* (SDG&E, 1995), which SDG&E follows for all

projects, also contains protocols for avoiding and minimizing potential erosion and water quality issues.

Some dewatering may be required from structural foundation excavations or trenches excavated for the underground facilities. Water from this activity would be considered a low threat discharge and eligible for Conditional Waiver No. 2 from the San Diego RWQCB if the water is discharged.

SDG&E plans to utilize tertiary-treated Title 22-compliant recycled water for approved construction uses including dust control, soil compaction, concrete mixing and/or housekeeping for the Proposed Project whenever feasible. The recycled water use will be permitted by SDG&E either as an approved use under the San Diego RWQCB Waiver 2 (Order No. R9-2014-0041), or as an approved administrator under the WRR for Recycled Water Use, adopted June 7, 2016 and effective August 6, 2016 (replaces General Order WQ-2014-0090-DWQ). Under either the waiver or the new general order permit the recycled water sourcing, transport, storage, application to land and monitoring and reporting requirements would be completed by a third-party recycled water manager. This contractor will assist SDG&E to ensure that all uses of recycled water for the Proposed Project construction are in strict accordance with the regulatory requirements of the applicable waiver or permit. The State has determined that use of recycled water in accordance with RWQCB Order No. R9-2014-0041 is consistent with the Water Quality Control Plan and unlikely to affect the quality of waters of the State. Like General Order WQ-2014-0090-DWQ, the WRR for Recycled Water Use includes prohibitions and requirements including but not limited to water quality specifications, use parameters, and monitoring to ensure that use of recycled water does not result in significant water quality degradation. Recycled water is prohibited from discharge to jurisdictional waters of the U.S. and/or waters of the State as well as any portion of the MS4. Proposed construction processes that cannot be completed with recycled water, such as dust control on portions of existing access roads within or adjacent to waters or wetlands, would require that the Proposed Project secure a potable water supply.

The recycled water will be sourced from the Olivenhain Municipal Water District (MWD). SDG&E has received a Water Availability Letter documenting the availability of the water from Olivenhain MWD for the Proposed Project (Refer to Appendix 1-B) and will secure a letter from the City of San Diego agreeing to allow application of this water to land for approved uses within the Proposed Project areas in City jurisdiction. The recycled water would be supplied via a secure hydrant and meter affixed to a blow-off valve fitting on an existing recycled water main in the Proposed Project area. Given the close proximity of the source to the Proposed Project alignment, the recycled water will be loaded into 2,000 or 2,500 gallon tanker trucks for direct use and/or may also be transported to a central staging location and stored in one or more drop tanks.

The Proposed Project would not cause or contribute to any violation of a water quality standard or violate any waste discharge requirement because SDG&E will comply with the regulatory requirements for protection of water quality, including implementation of the SWPPP, BMPs in accordance with SDG&E's *BMP Manual* and the *SDG&E Subregional NCCP Operational Protocols,* and permit requirements for the use of recycled water. Therefore, potential impacts would be less than significant.

Operation & Maintenance – Less than Significant Impact

SDG&E currently maintains and operates existing electric transmission, power, distribution, and substation facilities throughout the Proposed Project area including the existing power and transmission lines and the three substations affected by the Proposed Project. SDG&E's existing facilities and operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would be similar to existing conditions.

Throughout the operation and maintenance of the Proposed Project, SDG&E would continue to implement BMPs consistent with its *BMP Manual* and the *SDG&E Subregional NCCP Operational Protocols* and any future revisions to those documents. BMP's for storm water quality protection would minimize the potential for pollutants in runoff from the Proposed Project facilities and would be used to protect runoff water quality. BMP controls would ensure that the quality of water in the expanded Artesian Substation detention basin does not cause water quality violations either through outflow or infiltration to groundwater.

The Proposed Project would not violate any water quality standard or waste discharge requirements during operation and maintenance because SDG&E will comply with the regulatory requirements for protection of water quality including implementation of BMPs in the *BMP Manual* and *SDG&E Subregional NCCP Operational Protocols* and permit requirements for the use of recycled water. Therefore, potential impacts would be less than significant.

5.9.4.3 Question 9b - Substantially deplete groundwater supplies or interferes 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 pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Construction – No Impact

It is estimated that approximately 10 million gallons of water could be used for substation construction, substation getaways, power line construction, dust control, and landscaping over the duration of construction and restoration activities. The water demand from construction would be short-term and would be satisfied using recycled water supplied from existing recycled water supply facilities (Refer to Appendix 1-B); therefore, drought conditions will not affect the water source. Excess recycled water capacity is available (refer to Appendix 1-B) and the Proposed Project's use of recycled water would not result in new ground water pumping. Proposed construction processes that cannot be completed with recycled water, such as dust control on portions of existing access roads within or adjacent to waters or wetlands, would require that the Proposed Project secure a potable water supply. Potable water needs would comprise a very small fraction of the approximately 10 million gallons of water needed for construction and the demand would be short-term. Potable water would be obtained from existing Olivenhain MWD hydrant facilities. The Olivenhain MWD obtains its water supply primarily from the Colorado River and the State Water Project so the minor short-term use of potable water where needed would not deplete ground water supplies. Surface disturbance outside of existing roads would be limited and negligible compared to the affected watershed

areas, so there would be no impact on ground water recharge. Dewatering may be required during construction if localized shallow groundwater is encountered in structure foundation excavations or other project excavations. Dewatering may have localized effects on groundwater levels, but the effects would be isolated to a small area due to the short duration of pumping. Dewatering is not expected to affect any well. The Proposed Project is not located over any ground water basin identified by the State and no wells have been identified near the Proposed Project. For these reasons, there would be no net deficit in aquifer volume or lowering of the groundwater table and no impact on ground water supplies or recharge.

Considering these factors, no impacts related to groundwater supply or recharge are anticipated.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates existing electric transmission, power, distribution and substation facilities throughout the Proposed Project area. SDG&E's existing facilities and operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would be similar to existing conditions with respect to groundwater resources. Therefore, no impacts related to groundwater supplies would occur.

5.9.4.4 Question 9c - 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 – Less than Significant Impact

Proposed Project construction would not alter any existing drainage pattern. Construction work would occur in developed and graded areas. No new Proposed Project structures or facilities, or construction equipment, would be located in, or require grading of, jurisdictional waters or wetlands (refer to PEA Appendix 5.4-A). Construction of other Proposed Project facilities could slightly change infiltration or runoff. However, such changes would be negligible because they will be located in dispersed graded and developed areas, with diminished footprint areas.

Because construction of the Proposed Project would not alter any existing drainage pattern and would implement BMPs for erosion and siltation, impacts would be less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates existing electric power, distribution, and substation facilities throughout the Proposed Project area including the existing power and transmission lines and the three substations affected by the Proposed Project. Operation and maintenance of the Proposed Project facilities would not require changes to surface grades that could significantly alter the existing drainage patterns. If grading is needed to preserve surface contours in unpaved areas, such grading would occur with BMPs implemented to return runoff to existing drainage patterns and to stabilize surface disturbances. For these reasons, there would be no impact to drainage patterns that could affect erosion or siltation.

5.9.4.5 Question 9d - 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 Impact

See discussion under Question 9c above.

Operation & Maintenance – No Impact

See discussion under Question 9c above.

5.9.4.6 Question 9e - Create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Construction – Less than Significant Impact

Surface conditions would be restored as part of construction so they would not change infiltration or runoff. Construction disturbances would be limited in size and dispersed so as not to affect drainage patterns. The exception would be the expanded footprint of the Artesian Substation. The existing stormwater retention basin at the Artesian Substation would be expanded to prevent increases in peak storm flow conditions from the expanded Substation footprint, consistent with City hydrology design requirements. Considering these factors, construction impacts to runoff water volumes would be less than significant.

SDG&E would comply with the Construction General Permit and would develop and implement a SWPPP outlining BMPs for water quality protection. The Construction General Permit requires prevention of unauthorized discharges and implementation of BMPs needed to prevent discharges of polluted runoff to the maximum extent practicable. The Construction General Permit also requires inspections, monitoring, and reporting to ensure that polluted runoff is not discharging from the construction site. SDG&E would implement BMPs in accordance with the Construction General Permit and its *BMP Manual*. With BMPs, construction of the Proposed Project would not be a substantial source of polluted runoff considering the regulatory requirements for protection of water quality. Therefore, potential impacts would be less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates existing electric power, distribution, and substation facilities throughout the Proposed Project area including the existing power and transmission lines and the three substations affected by the Proposed Project. Operation and maintenance of the Proposed Project facilities would not require changes to surface grades that could alter runoff volumes. If grading is needed to preserve surface contours in unpaved areas then it would occur with BMPs implemented to return runoff to existing drainage patterns and to stabilize surface disturbances. For these reasons, there would be no impact to drainage patterns that could affect runoff water volumes. SDG&E would implement BMPs during operation and maintenance in accordance with its *BMP Manual*. Considering that operations and maintenance will not require

changes to surface grades and will be similar to existing conditions, including SDG&E's implementation of BMPs, the operations and maintenance impact of the Proposed Project on runoff volumes will be less than significant and will not result in a substantial source of polluted runoff.

5.9.4.7 Question 9f - Otherwise substantially degrades water quality?

Construction – Less than Significant Impact

Construction of the Proposed Project would comply with the Construction General Permit, which includes implementation of a SWPPP with BMPs to prevent degradation of water quality from stormwater runoff and other permitted discharges and ensure that potential impacts to water quality remain less than significant. Whereas some dewatering may be required from structural foundation excavations or trenches excavated for the underground facilities, this activity would be considered a low threat discharge and eligible for Conditional Waiver No. 2 from the San Diego RWQCB if the water is discharged. Therefore, potential impacts would be less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates existing electric power, distribution, and substation facilities throughout the Proposed Project area including the existing power and transmission lines and the three substations affected by the Proposed Project. SDG&E's existing facilities and operations and maintenance activities are included in the baseline for evaluating the impacts of the Proposed Project. SDG&E would continue to implement BMPs during operation and maintenance in accordance with its *BMP Manual.* Considering that operations and maintenance would be similar to existing conditions and BMPs would be implemented, the operations and maintenance impact of the Proposed Project would not otherwise degrade water quality. Therefore, no impacts would be anticipated.

5.9.4.8 Question 9g - 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?

Construction, Operation and Maintenance – No Impact

The Proposed Project does not involve the construction of housing. Therefore, no impacts related to placement of housing in a 100-year floodplain would occur.

5.9.4.9 Question 9h – Place structures within a 100-year flood hazard area which would impede or redirect flood flows?

Construction, Operation and Maintenance – No Impact

The Proposed Project would not place structures within an area with the potential for 100-year floods. 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 impact flood flows. One existing structure that would be used for the Proposed Project occurs within the 100-year

flood zone. No modifications to this structure are proposed. Therefore, the Proposed Project would have no impact to 100-year floodplains.

5.9.4.10 Question 9i - 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, Operation and Maintenance – No Impact

The Proposed Project is not located within an identified inundation area for dam failure. No levees are located within the Proposed Project area. Therefore, impacts related to loss, injury or death involving flooding, including flooding as a result of the failure of a levee or a dam, are not anticipated.

5.9.4.11 Question 9j – Expose people or structures to inundation by seiche, tsunami, or mud flow?

Construction – Less than Significant Impact

The MJHMP identifies areas that would be subject to tsunami, coastal erosion, and rain-induced landslide. The Proposed Project is located well inland of any tsunami or coastal erosion threat, and there are no large bodies of water nearby that could be a source of seiche.

Mud flows in San Diego County are commonly associated with steep slopes in mountainous areas underlain by geologic formations that produce sandy soils or weathered gabbroic soils that have large amounts of clay. Mud flows can be exacerbated by activities that result in large areas of vegetation removal such as fires. The MJHMP identifies some steep slope areas in the Proposed Project area. However, the areas around the Proposed Project are now mostly developed, limiting the potential for mudflow, and proposed pole and structure locations are located away from low ground that may be more susceptible to mudflow. The risk to people from mud flows during construction would be less than significant due to the low risk mud flow occurrence for the area in general and the short term of construction.

Operation & Maintenance – No Impact

As noted above, the MJHMP identifies areas that would be subject to tsunamis, coastal erosion, and landslides. The Proposed Project is well inland of the coast and there are no large bodies of water nearby. Therefore, no impacts related to seiche or tsunamis would occur.

SDG&E currently maintains and operates existing electric power, distribution, and substation facilities throughout the Proposed Project area. SDG&E's existing facilities and operations and maintenance activities are included in the baseline for evaluating the impacts of the Proposed Project. The Proposed Project footprint does not occur in any identified mud flow hazard area. The Proposed Project facilities occur in developed areas and operation and maintenance of the Proposed Project would not be expected to contribute to the occurrence of mud flows or be affected by a mud flow. Therefore, no impacts would occur.

5.9.5 Applicant Proposed Measures

The Proposed Project has no potentially significant impacts relating to hydrology and water quality. Therefore, no APMs are proposed.

5.9.6 Detailed Discussion of Significant Impacts

Based upon the preceding analysis, no significant impacts relating to hydrology and water quality are anticipated from the Proposed Project.

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