D.7 Hydrology and Water Quality

This section evaluates the Project as it would affect hydrology and water quality. The analysis focuses on the current state of hydrology and water quality in the project area and examines how the Project would affect local water system volume, flow, and quality.

D.7.1 Environmental Setting

The Project is located in southwestern Riverside County and crosses land within the cities of Lake Elsinore and Perris and unincorporated areas of Riverside County. Climatic conditions for Riverside County, including the cities of Lake Elsinore and Perris, are typical of inland areas of Southern California. The climate is dry, with an average annual precipitation at both cities of 10.7 inches. Record low and high rainfall is 5.3 inches and 21.4 inches, respectively. The area receives 85 percent of its annual rainfall from November through March. Light winter snow can occur in the area at higher elevations, but snow is uncommon (Western Regional Climate Center 2006).

D.7.1.1 Valley-Ivyglen 115 kV Subtransmission Line

Several surface water features are present near the proposed subtransmission line route. The surface waters include the San Jacinto River, Canyon River, Corona Lake (a reservoir on the Temescal Wash). Releases from the Railroad Canyon Reservoir flow to the San Jacinto River, which flows into Lake Elsinore. This in turn flows into the Temescal Wash during the periods of high lake levels. Various sections of the proposed subtransmission line route also fall within areas of 100-year flood zones and dam failure inundation areas. Groundwater along the proposed subtransmission line route is largely controlled by geology of the area.

The proposed subtransmission line route would travel through the San Jacinto Valley and Santa Ana River watersheds. The eastern portion of the proposed subtransmission line route is located in the San Jacinto Valley watershed, which is considered by the Santa Ana Watershed Project Authority (SAWPA) to be a distinct watershed, while the US EPA considers the San Jacinto Valley watershed as part of the Santa Ana River watershed (SAWPA 2006). Watersheds in the project area are shown on Figure D.7-1. The Santa Ana River watershed is an arid region. As a result, there is little natural perennial surface water in the watershed.

Surface waters originate from the upper portion of the Santa Ana River watershed, primarily in the San Bernardino and San Gabriel Mountains and mainly consist of snowmelt and high quality storm water runoff. This upper zone of the watershed has the highest gradient. Soils and geologic units in this area do not allow subsurface percolation of surface water. The Santa Ana River is confined in its lateral movement in this zone, contained by the slope in the mountainous regions (SAWPA 2002). Surface water in the project area is shown on Figure D.7-2.

The San Jacinto River drains the San Jacinto Valley and the western slopes of the San Jacinto Mountains and terminates at Lake Elsinore. Much of the flow from the upper watershed basin infiltrates and recharges the groundwater. The remaining San Jacinto River flow cuts a course northwest through the Lakeview Mountains, eventually turning southwest across the Perris Valley and draining into the Railroad Canyon Reservoir (also called Canyon Lake). Downstream of Canyon Dam, minimal base flows are common during drier periods. Heavy storms result in larger flows and possible overflows of Canyon Dam during and after the storms. The San Jacinto River flows out of the Railroad Canyon Reservoir southwest

for approximately three miles to Lake Elsinore. When water levels in Lake Elsinore reach 1,255 above mean sea level, the natural outflow for Lake Elsinore is Temescal Wash. Temescal Wash enters into the Santa Ana River watershed and joins the Santa Ana River near Corona (EMWD 2005, SAWPA 2005).

Lake Elsinore is a natural lake, approximately five miles long and two miles wide, and is approximately three miles south of the proposed subtransmission line route. The lake varies in size in response to varying hydraulic conditions ranging from 6,000 acres in very wet years to a dry lakebed in drought years. A levee was constructed across the lake in 1995 to reduce the water surface area and reduce evaporation. The San Jacinto River is the largest tributary to Lake Elsinore and flows approximately six miles west of the Valley Substation. Flow has been reduced over the last 100 years because of stream diversions and groundwater withdrawals in the tributary watershed.

The main water features along the western portion of the proposed subtransmission line route are Temescal Wash and Corona Lake. Temescal Wash serves as the natural drainage course for outflow from Lake Elsinore and the major drainage artery for the Temescal Valley. The wash flows 18 miles from Lake Elsinore northwestward to the Santa Ana River near Corona. The Temescal Wash receives treated effluent from the Eastern Municipal Water District's (MWD) recycled water system when effluent flows exceed recycled water demand and storage capacity in Eastern MWD's service area. This flow is mostly during winter and does not contribute to base flows. As the area grows, the frequency of effluent discharge to Temescal Wash is expected to increase, eventually becoming year-round (MWH 2005). An existing transmission line crosses a riparian area associated with the Temescal Wash near Lake Street and Walker Canyon Road.

Corona Lake is a 3,000 acre-foot man-made impoundment located on Temescal Wash. It is approximately 6.1 miles downstream from Nichols Road in the City of Lake Elsinore. The lake was constructed by the Temescal Water Company (purchased by Elsinore Valley MWD) for use as a source of agricultural and industrial water supply. Currently, Corona Lake is stocked with trout and used as a fishing recreation area. Corona Lake is approximately 1.9 miles southeast of the Ivyglen Substation.

Regional flood control planning and facilities construction for the project area are within the jurisdiction of the Riverside County Flood Control District. The District is also responsible for maintenance and operation of flood control facilities including debris, dams, storm channels and storm drains. Temescal Wash, the San Jacinto River, and Lake Elsinore are considered significant flood hazards along the proposed subtransmission line route. The Federal Emergency Management Agency (FEMA) is responsible for mapping the areas that are predicted to flood during 100-year and 500-year storm events. Flood hazard zones are identified by FEMA on Flood Insurance Rate Maps. These FEMA maps indicate the estimated level of inundation under various conditions and intensities (Figure D.7-3). Riverside County Transportation and Land Management Authority maps (County of Riverside 1993) show the proposed subtransmission line route Segments E-1, C-6, W-3, and W-6 would be located within areas of 100-year flood zones, with base flood elevations and flood hazards determined. The remainder of the proposed subtransmission line route segments would not be located within flood hazard zones.

Reservoirs in the project area include Railroad Canyon Reservoir and Corona Lake. As denoted in the General Plans for the City of Lake Elsinore and the City of Perris, the inundation areas for a dam break generally correspond to the 100-year floodplain boundaries. The proposed subtransmission line route and telecommunications line Segments E-1, C-6, W-3, and W-6 and the Valley Substation would be located in dam failure inundation areas (City of Perris 2004, City of Lake Elsinore 2006). The remainder of the Project would not be located within dam inundation areas.

Insert 1 of 2

Figure D.7-1 Regional Watersheds

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure D.7-1 Regional Watersheds

Insert 1 of 2

Figure D.7-2 Surface Waters in the Project Study Area

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Insert 2 of 2

Figure D.7-2 Surface Waters in the Project Study Area

Insert 1 of 2

Figure D.7-3 100-Year Flood Hazards within the Project Study Area

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Insert 2 of 2

Figure D.7-3 100-Year Flood Hazards within the Project Study Area

Groundwater in the Santa Ana Watershed is highly controlled by the geology of the area, including bedrock configuration and extensive faulting. Most groundwater basins are unconfined. However, variable depth to bedrock and presence of faults cause pressure zones where water flows towards (or to) the ground surface. The Elsinore groundwater basin is supplied primarily by precipitation in the surrounding watershed. Other sources of inflow are infiltration along the San Jacinto River Channel upstream of Lake Elsinore, along with agricultural and residential return flows. The only major outflow of the groundwater basin is municipal pumping for potable water. A natural variation in groundwater depth underneath Lake Elsinore results in a steep groundwater gradient that flows northwest to southeast (City of Lake Elsinore 2006).

D.7.1.2 Telecommunications Line

The telecommunications line infrastructure would follow the proposed subtransmission line route with the exception of portions of the line that would be installed in underground conduits near the Valley, Ivyglen and proposed Fogarty Substations. Therefore, the telecommunications line has the same environmental setting as the proposed subtransmission line route detailed in Section D.7.1.1.

D.7.1.3 Fogarty Substation

Lake Elsinore, the San Jacinto River, and Temescal Wash are the primary surface hydrology/drainages that surround the proposed Fogarty Substation. A northern drainage divide exists between Lake Elsinore and the proposed Fogarty Substation (i.e., water from the site drains to the north and northwest away from the lake) at an elevation of roughly 1,400 feet. An eastern drainage divide exists about one mile southeast of Lake Elsinore.

The soils present at the proposed Fogarty Substation site (Altamont, Ramona, and Placentia) are deep, moderately well drained soils with medium runoff and moderately slow permeability. All soils at the substation site may range from 30 to 80 inches thick depending upon age and degree of erosion (NRCS 2006). See Section D.7 Geology, Soils, and Mineral Resources for additional information.

The proposed Fogarty Substation is not located within a 100-year flood zone hazard area (Figure D.7-3) or within a dam inundation area (City of Lake Elsinore 2006).

The proposed Fogarty Substation is within the Santa Ana Watershed. This part of the watershed drains to the northwest along Temescal Wash (or Creek) for which the surface water quality data is summarized in the Santa Ana Regional Water Quality Control Board (SARWQCB) Basin Plan (1995 with triennial updates).

Groundwater in the proposed Fogarty Substation site is within the Warm Springs subbasin, which is north of the Elsinore subbasin. The Warm Springs subbasin lies between the Lee (Corona) Lake groundwater subbasin to the west, and non-water-bearing formations to the north and east. The Warm Springs subbasin is not hydrologically connected to the Elsinore subbasin as they are separated by faults and non-water-bearing bedrock. The Warm Springs subbasin is the primary source of recharge to the area (SAWPA 2002, CDWR 2006).

Water for construction and operation of the proposed Fogarty Substation would come from the City of Lake Elsinore. The City of Lake Elsinore's local water supply is provided by the Elsinore Valley MWD, which uses approximately 53 percent imported water, 37 percent deep aquifer well water, and 10 percent treated water from Canyon Lake (EVMWD 2006). The deep aquifer well sources supply roughly 12,600 acre-feet per year.

Little is known about the groundwater characteristics of Warm Springs subbasin, although it is assumed that the groundwater resource is limited and may be of fair quality. The next subbasins downstream are Lee (Corona) Lake, Coldwater, Bedford, and Temescal. Water quality objectives for these subbasins are provided in Table D.7-1 (SARWQCB 1995). These values are the water quality constituent thresholds for the subbasins and any contributory degradation due to the proposed Fogarty Substation would be measured against the potential to exceed these values.

Table D.7-1 Water Quality Objectives – Temescal Creek Drainage

Groundwater Subbasins	Water Quality Objectives (mg/L)						Hydrolic Unit	
	TDS	Hard.	Na	Cl	NO_3-N	SO_4	Primary	Secondary
Bedford (Upper Temescal I)	840	440	80	100	9	200	801.32	
Lee (Corona) Lake (Upper Temescal II)	600	300	100	100	6	140	801.34	
Coldwater (Upper Temescal III)	350	175	45	25	2	125	801.31	
Temescal	840	440	120	180	9	160	801.25	

Source: SARWQCB

A small drainage course meanders northerly along the eastern property boundary of the proposed Fogarty Substation. The drainage course generally follows the right-of-way (ROW) for Dobbler Avenue in a defined channel that heads west in several locations, crossing the 20 feet setback from the ROW for the non-existent roadway and extending briefly into a 1.0 acre excess land portion of the proposed Fogarty Substation. The closest westerly meander of the arroyo-like drainage course, at the southeast corner of the property, is located approximately 170 feet east of the southeast corner of the 2.3-acre development envelope of the Project. Site grading for the Project would neither intrude into nor require a crossing of the drainage course. Approximately 135 feet of a shallow drainage swale that is tributary to the above drainage crosses the southeast corner of the 2.3 acre proposed Fogarty Substation footprint. At its widest point near the southern boundary wall of the substation site, the bottom of the swale is approximately 30 feet wide. The bottom of the swale narrows to approximately 5 feet where its course crosses the eastern boundary of the substation development envelope. Surface sheet flow from an upstream catchment covering an area of approximately 9.25 acres enters the drainage swale that crosses the proposed Fogarty Substation site.

D.7.1.4 Valley-Ivyglen Substation Improvements

The Valley Substation is located in the San Jacinto Valley watershed, while the Ivyglen Substation is located in the Santa Ana River watershed. The main water body near the Valley Substation is the San Jacinto River, which is the largest tributary to Lake Elsinore. The Ivyglen Substation is located on Temescal Wash, with the nearest water body being Corona Lake. The Valley Substation is located in a 100-year flood zone as well as a dam failure inundation area. Flood hazards would not affect the Ivyglen Substation. The Riverside County Flood Control District is responsible for maintenance and operation of flood control facilities including debris, dams, storm channels, and storm drains around the Valley and Ivyglen Substations. Additional information on the Valley and Ivyglen Substation environmental settings has already been outlined in Section D.7.1.1 Valley-Ivyglen Subtransmission Line.

D.7.2 Applicable Regulations, Plans, and Standards

D.7.2.1 Federal

The Clean Water Act (CWA), as amended by the Water Quality Act of 1987, regulates water quality in the United States. The CWA defines regulations for the discharge of pollutants to waters of the United States from any point source. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. These waters include all navigable waters and tributaries thereto, and adjacent wetlands. Section 401 of the CWA requires that any activity, including river or stream crossings during road, pipeline, or transmission line construction, which may result in a discharge into a State water body, must be certified by the Regional Water Quality Control Board (RWQCB). This certification ensures that the proposed activity does not violate State and/or federal water quality standards. Section 402(p), establishes a framework for regulating non-point source storm water discharges under the National Pollutant Discharge Elimination System (NPDES). Each RWQCB implements the NPDES storm water program.

D.7.2.2 State

The Porter-Cologne Water Quality Control Act provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designates the State Water Resources Control Board (SWRCB) as having jurisdiction over state water rights and water quality policy and also establishes nine RWQCBs that oversee water quality on a day-to-day basis at the local and regional level. The SWRCB and RWQCB have the responsibility of granting permits for certain point-source discharges, and for construction and storm water runoff, and either waste discharge requirements or conditioned water quality certification for other discharges. The SWRCB and RWQCBs are also responsible for establishing water quality standards and developing and implementing regional basin plans to regulate discharges that may affect either surface water or groundwater quality. The Santa Ana RWQCB has jurisdiction over the project area and is responsible for issuing a water quality certification to ensure the Project complies with federal permits and does not violate state water quality standards.

California has adopted a general storm water permit covering non-point source discharges from certain industrial facilities and from construction sites involving more than one acre of disturbance. The permit requires preparation of a storm water pollution prevention plan (SWPPP) and implementation of best management practices to reduce the potential for non-storm water pollutants to be discharged from a construction site to state waters.

D.7.2.3 Regional and Local

Riverside County is susceptible to flood hazards associated with major stream drainages, including the San Jacinto River and has experienced severe flooding of rivers and creeks. The County discourages urban development on floodplains without major structural improvements. The Riverside County General Plan Safety Element provides several policies (S 4.2, S 4.4, S 4.5, S 4.8, S 4.9, S 4.10, S 4.11, and S 4.12) to minimize the risk and hazards associated with modification to water courses and possible down stream flooding. These policies generally require any development to comply with the Building Code, be designed to avoid erosion or sedimentation, avoid modifying water courses, and not result in any increase in flood levels during a flood.

The Elsinore Area Plan identifies the Temescal Wash, Murrieta Creek, the San Jacinto River, and Lake Elsinore as significant flood hazards. The City of Lake Elsinore requires compliance with the Riverside County Flood Control and Water Conservation District NPDES/Municipal Storm water Management

Program. The County's Storm water Quality Best Management Practice Design Handbook applies to erosion control and sediment management practices during grading and project operations.

The majority of the regulatory requirements regarding environmental issues, such as flooding and surface water quality, are addressed at the project specific level and not through the Lake Elsinore General Plan designations. The Lake Elsinore General Plan Update includes guidelines to manage water resources. These guidelines require a grading and erosion control ordinance as well as a spill prevention and control program to reduce impacts to surface and groundwater resources.

The City of Perris General Plan identifies goals, policies, and implementation measures to minimize impacts of new construction. These policies (I.B.1, I.B.2, I.B.3, and I.B.4) are to ensure that any development complies with regional storm water requirements, incorporates facilities for onsite control of storm water runoff, and has flood mitigation plans.

The SWRCB Watershed Management Initiative and the Lake Elsinore Stabilization Project have measures that are relevant to the Project:

- Through the implementation of the Multiple Species Conservation Plan, the City will preserve natural open space that contains extensive wetlands and drainages. Preservation of these natural features or buffering development from wetlands and drainage courses will ensure that further degradation of features that drain into the Lake (Lake Elsinore) do not occur.
- The Watershed Resources Management Initiative should preserve existing unimproved waterways, reaches, and tributaries of the San Jacinto River by protecting their natural condition, by establishing adequate buffers, and by stream restoration.
- Route storm water flows to on-site detention and retention facilities to increase recharge to groundwater and improve water quality.

In addition, under the Calderon-Sher Safe Drinking Water Act of 1996 (the Act), the EVMWD is required to prepare a report every three years for contaminants that exceed public health goals (PHGs; Health and Safety Code Section 116470 (2) [b]). PHGs are published by the Office of Environmental Health Hazard Assessment (OEHHA; Health and Safety Code Section 116365) as concentrations of contaminants in drinking water that OEHHA considers to pose no significant health risk if consumed for a lifetime. Elsinore Valley MWD maintains its system to these standards.

D.7.3 Project Impacts and Mitigation

D.7.3.1 Significance Criteria

For the purposes of the following evaluation, the Project would cause a significant impact on hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of 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)

- 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
- 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
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff
- Otherwise substantially degrade water quality
- 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
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam
- Inundation by seiche, tsunami, or mudflow

Potential impacts are discussed according to the significance criteria above. Each impact is categorized according to the following classifications:

Class III – Less than significant impact without mitigation measures
Class II – Less than significant impact after mitigation measures are implemented
Class I – Significant impact and no feasible mitigation measures are available

D.7.3.2 Applicant Proposed Measures

HYDRO-SCE-1: The SWPPP would be submitted to Riverside County along with grading permit applications. Implementation of the SWPPP would help stabilize graded areas and waterways, and reduce erosion and sedimentation. The plan would designate Best Management Practices (BMPs) that would be adhered to during construction activities. Erosion-minimizing efforts such as straw wattles, water bars, covers, silt fences, and sensitive area access restrictions (for example, flagging) would be installed before clearing and grading began. Mulching, seeding, or other suitable stabilization measures would be used to protect exposed areas during construction activities. During construction activities, measures would be in place to ensure that contaminants are not discharged from construction sites. The SWPPP would define areas where hazardous materials would be stored, where trash would be in-place, where rolling equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars and structural steel members would be stored. Erosion control during grading of the construction sites and during subsequent construction would be in-place and monitored as specified by the SWPPP. A silting basin(s) would be established, as necessary, to capture silt and other materials, which might otherwise be carried from the site by rainwater surface runoff.

HYDRO-SCE-2: An environmental training program would be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures and SWPPP measures, to all field personnel. A monitoring program would be implemented to ensure that the plans are followed by all personnel throughout the construction period.

HYDRO-SCE-3: The SWPPP would include procedures for quick and safe cleanup of accidental spills during construction. This plan would be submitted to Riverside County with the grading permit

application. The SWPPP would prescribe hazardous materials handling procedures for reducing the potential for a spill during construction and would include an emergency response program to ensure quick and safe cleanup of accidental spills. The plan would identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, would be permitted.

HYDRO-SCE-4: Dewatering operations would be performed if groundwater is encountered while excavating or constructing the proposed subtransmission line, telecommunications line, or Fogarty Substation. These operations would include, as applicable, the use of sediment traps and sediment basins in accordance with BMP NS-2 (Dewatering Operations) from the California Storm water Quality Association's (CASQA) California Storm water BMP Handbook.

D.7.3.3 Impact Analysis

Impact HYD-1: Water quality standards and waste discharge requirements

The construction of the proposed subtransmission line route, telecommunications line, and associated substations would have the potential to cause water quality impacts through drainage and erosion. Construction would include grading and excavation for the placement of temporary and permanent access roads, installation of subtransmission line poles and underground conduits, and the laying of foundations that could remove the vegetation from the soil surface leaving bare soil susceptible to erosion caused by stormwater runoff that could compromise water quality and drainage systems in the project area. Additional discussion regarding drainage and erosion is included in Impact HYD-3.

The Santa Ana RWQCB is responsible for water quality issues in the region of the Project and administering the National Pollutant Discharge Elimination System (NPDES). In order to fulfill this responsibility the Santa Ana RWQCB requires a General Construction Activity Storm Water Permit. The permit is required for any construction activity that includes clearing, grading, excavation, reconstruction, and dredge and fills that result in the disturbance of at least one acre of total land area. The proposed subtransmission line route and telecommunications line would disturb approximately 24 acres for pole and access road construction. The general permit requires preparation of a site-specific SWPPP, which would include measures from the general permit to avoid any potential for generating polluted storm water runoff. Diesel fuel, lubrication oil, hydraulic fluids, antifreeze, and other construction-related materials would have a limited likelihood of affecting surface water quality in the project area. Drips and spills would be contained on-site before they could be released to storm water. The SWPPP for hazardous materials is addressed in Section D.9 Hazards. After implementation of the SWPPP (HYDRO-SCE-1 and 3), equipment leaks and spills would not present a significant threat to water quality.

Construction of the telecommunications line would involve ground disturbance for the underground conduits, which would be minimized through implementation of BMPs. Underground conduits would be installed using the trenching method. A trench 18 inches wide and 36 inches deep would be dug with a backhoe. A 5-inch PVC conduit would be placed, and then covered with slurry and backfill. To mitigate the displacement of soil, the same methods would be followed as described in this section regarding construction of the proposed subtransmission line. Underground portions of the telecommunications line would not be located in relative proximity to surface water and would not be placed deep enough to encounter groundwater. In the event construction did encounter groundwater, applicant proposed measure HYDRO-SCE-4 would minimize impacts.

The Fogarty Substation design would include full consideration of the potential for erosion and release of potential groundwater and surface water contaminants. Construction of the Fogarty Substation would include grading and excavating of the substation site and access roads with the potential to expose soil surface that would be susceptible to erosion caused by storm water runoff. These construction activities

could compromise water quality and drainage systems in the project area. Construction of the Fogarty Substation will be required to comply with the NPDES and the 1996 State Water Resources Control Board (SWRCB) General Permit for discharges from utility vaults and underground structures to surface waters. This constraint will include the requirement to implement appropriate Pollution Prevention Practices (PPPs), which are equivalent to BMPs. In addition, a notice of intent to comply with the Storm Water General Permit requirements for construction activities would be submitted to the Santa Ana RWQCB and a SWPPP would be prepared and implemented to ensure consistency standards and discharge requirements. All activities would be subject to stormwater control requirements defined in the NPDES permit and SWPPP. Implementation of applicant proposed measures HYDRO-SCE-1, 2, 3, 4, and BMPs and compliance with existing regulations would reduce the Fogarty Substation impacts to water quality and waste discharge regulations to less than significant levels (Class II).

Improvements of the Valley and Ivyglen Substations would involve upgrading and installing new equipment at the existing substation sites. Work would not involve additional ground disturbance and would not alter the existing substation drainage or expose pollutants to storm water flows. The substation upgrades would not violate water quality standards or discharge requirements.

Operation of the proposed subtransmission line, telecommunications line, and associated substations would not violate any water quality standards or waste discharge requirements. Once operational, the Project would be periodically maintained and be inspected at least once a year by driving and/or flying the line route. Vehicles would use existing access roads along the proposed subtransmission line to conduct a visual inspection. These roads that would be graded during construction phase would have appropriate drainage structures to minimize road damage and erosion due to uncontrolled water. By using these roads vehicle activity would not promote erosion and therefore would not impact water quality. Risk of accidental release of chemicals from inspection vehicles into existing water drainages during maintenance would be less than significant. These maintenance activities would not impact hydrologic resources within or adjacent to the project area.

The proposed subtransmission line, telecommunications line, Fogarty Substation, and the upgraded Ivyglen and Valley Substations would not violate water quality standards or discharge requirements during construction or operation after implementation of HYDRO-SCE-1, 2, 3, and 4. Construction and operation would therefore have a less than significant effect on surface water or groundwater quality. Implementation of mitigation measure (MM) HYD-1a and applicant proposed measures would comply with water quality standards and waste discharge requirements, thus reducing impacts associated with hydrology and water quality to less than significant (Class II).

Mitigation Measures for Impact HYD-1

MM HYD-1a: All plans identified in HYDRO-SCE-1 and 3 shall be reviewed and approved by the Santa Ana RWQCB for compliance with the Santa Ana Water Quality Control Plan prior to initiation of construction. Verification of approval shall be provided to the California Public Utilities Commission (CPUC) at least 60 days before construction.

Impact HYD-2: Groundwater supplies and recharge

Construction of the Project will include the creation of new impervious surfaces that have the potential to influence groundwater absorption rates and deplete groundwater supplies. In addition, any groundwater used during construction could deplete the availability of groundwater, but also increase the amount of wastewater and potentially overwhelm the ability of the ground to absorb the water through existing drainage systems. Total installation of the proposed subtransmission line and telecommunications line includes the creation of approximately 660 square feet of impervious surface (foundations for tubular

steel poles (TSPs)) and 24 acres of semi-impervious surface (new unpaved access roads) over an area of approximately 25 square miles. The proposed subtransmission line, telecommunications line, and Valley and Ivyglen Substation upgrades would not include any facilities that would use groundwater. Any impacts on groundwater supplies and recharge would be less than significant (Class III).

Construction of the Fogarty Substation would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. An Elsinore Valley MWD water service connection would be used to supply the water for construction activities. This relatively small amount of water would be supplied from the Elsinore Valley MWD system of groundwater, surface water, and imported water. Therefore, the Fogarty Substation would result in no impact to groundwater supplies through depletion.

The Fogarty Substation would overlie the Santa Ana Watershed. The size of the proposed Fogarty Substation footprint (2.3 acres) is very small compared to the area of the entire Santa Ana River Watershed (1792000 acres) and the ability of precipitation to infiltrate into most of the 2.3 acres is maintained (CDWR 2006). The small project footprint would not inhibit recharge to the groundwater basin. Therefore, construction of the Fogarty Substation would not significantly impact groundwater resources.

Operation of the proposed subtransmission line, telecommunications line, and Fogarty Substation would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge leading to a net deficit in aquifer volume or a lowering of the local ground water table level. Water from the City of Lake Elsinore water system would be used for landscape irrigation during construction. This water usage would be minimal and therefore is not considered a significant impact. No groundwater or surface water resources would be impacted nor would any subsequent structures be placed on site or result in activities that could adversely impact or be impacted by site or neighboring hydrology.

In addition, water that currently enters the Valley and Ivyglen Substation sites percolates into the local groundwater system. Most rainwater falling on the sites would continue percolating, with only minor additional storm water flowing to a storm drain. Therefore, the amount of groundwater recharge would not decrease substantially in the area, and consequently, there would be no impact to groundwater recharge at the Valley and Ivyglen Substation sites.

As a result, impacts to groundwater supplies and recharge would be reduced to less than significant levels (Class III).

Impact HYD-3: Drainage patterns, erosion, and siltation

Drainage and runoff would not be significantly affected by construction of the proposed subtransmission line, telecommunications line and substation upgrades. However, there would be some potential for increased sediment in runoff from pole pad and access road construction sites. If sediment-laden runoff from the construction sites entered the nearby waterways, it could potentially increase turbidity, increase sedimentation, and reduce the flood-carrying capacity of downstream channels. The Applicant's SWPPP would include BMPs, such as covering spoils piles, using erosion control equipment such as straw waddle and silt fencing, and recontouring and revegetating areas after construction to prevent sediment runoff to any nearby drainages. Applicant Proposed Measures HYDRO-SCE-1, 2, 3, and 4 would further reduce potential impacts from erosion to a less than significant level (Class II).

Construction of the proposed subtransmission line would involve excavation of holes for pole installation within a construction pad. Pole locations would be within existing ROWs, adjacent to public roads, or along newly constructed access roads. New poles may be constructed adjacent to existing pole sites. Existing sites may require minor grading, leveling, and clearing to enlarge existing pads to accommodate

new poles. Poles would be an average of 200 feet apart, with a minimum span of 100 feet and a maximum span of 500 feet. The proposed subtransmission line and telecommunications line would include installation of approximately 615 LDS poles and 45 TSPs. TSP footings would be approximately six feet in diameter and at least 22 feet below the ground surface. The Applicant would not install any poles within drainages as defined by the US Geological Survey (7.5 minute quadrangles) nor substantially modify any such drainages.

Where new access roads would be necessary, pole sites would be cleared and graded when access roads are constructed. Approximately 16 miles of new temporary and permanent roads (12 feet wide) would be constructed for access to the construction pole pad sites. Existing roads would be used as much as possible. These new roads would be designed and constructed with the appropriate drainage features, such as culverts and water bars using industry standard BMPs.

Construction of the telecommunications line would use the process of trenching and boring to install the underground conduits, which could increase the potential for erosion in the area. Erosion control methods similar to those for the proposed subtransmission line would be implemented. The trenching and conduit installation would not alter drainages because all trenches would be backfilled and recontoured to existing conditions. With the implementation of BMPs, there would be no significant impacts related to drainage and erosion from installation of the telecommunications line.

Construction of the Fogarty Substation would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on- or off-site after implementation of the Construction and Operations SWPPPs (HYDRO-SCE-1, 2, and 3). Surface water flow on the site is presently overland on native soil with a less than one percent ground slope generally to the east and northeast. A small arroyo-type drainage swale occupies the northeast corner of the property, most of which lies outside of the proposed Fogarty Substation site. Final site grades will maintain a slight slope to the east and necessitate filling the low area of the swale blocking flow from up stream. This modification will require construction of a flow by-pass to maintain the small amount of runoff now continuing across this area. Although water use generated on the site will be very small, SCE proposes to construct a small on-site fenced retention basin on the east side of the property to contain precipitation- and man-made runoff so that it does not exit the developed area. Once a local storm runoff system is functional near the site, the storm water runoff from the substation may or may not then be diverted to that system. There are no named or otherwise identified United States Geological Survey blueline streams or rivers that cross, or come into contact with the Fogarty Substation site; thus no stream or river would be altered in a manner that results in substantial erosion or siltation, on- or off-site, nor would storm water be directed into such resources.

Improvements to the Valley and Ivyglen Substations would not alter any streams or other natural drainages as all construction will take place on the existing structures. During new equipment installation, BMPs would be implemented to control possible storm water runoff from the site. Substation improvements would not affect drainage patterns because the alterations would all take place within the substation area. Substation improvements would have no impact to drainage and erosion (Class III).

The proposed subtransmission line, telecommunications line, Fogarty Substation and Valley and Ivyglen Substation upgrades would be designed to minimize erosion. Operation of the new facilities would include periodic maintenance. Roads would be maintained such that they would not cause or contribute to erosion in the area. Maintenance work would not affect drainages and would not require ground disturbance that could cause erosion.

Operation and maintenance of the Project after implementation of the Applicant Proposed Measures HYDRO-SCE-1, 2, 3, 4, BMPs, and regulatory requirements would have a less than significant impact (Class II) on drainage patterns and erosion or siltation.

Impact HYD-4: Draining patterns and flooding

As stated in the previous subsections, the construction of the proposed subransmission line, telecommunications line, Fogarty Substation, and Ivyglen and Valley Substation upgrades would not alter the existing drainage pattern of the project area. However, there is potential for increased surface runoff due to construction activities. If sediment-laden runoff from the construction sites entered the nearby waterways, it could potentially increase turbidity, increase sedimentation, and reduce the flood-carrying capacity of downstream channels. Construction activities conducted when the ground is wet also create the potential for increased runoff due to a reduction in infiltration and evaporation through vegetation removal. However, with the implementation of Applicant Proposed Measures HYDRO-SCE-1, 2, 3, and 4, any increase in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site would be less than significant (Class III).

Impact HYD-5: Runoff water and storm water drainage systems

Major drainages located in proximity to the proposed subtransmission line route include the San Jacinto River and Temescal Wash. The proposed subtransmission line route would cross the San Jacinto River approximately six miles west of the Valley Substation as well as the Temescal Wash near Walker Canyon Road. The proposed subtransmission line route and access roads would also cross numerous ephemeral and intermittent drainages. Road construction could potentially accelerate soil erosion rates and sedimentation in downstream waterways.

Construction of the proposed subtransmission line, telecommunications line, Fogarty Substation, and Ivyglen and Valley Substation improvements would require minimal water and therefore generate little waste discharge to exceed the capacity of existing or planned storm water drainage systems. Storm water from the proposed subtransmission line and Fogarty Substation construction sites would be managed through the provisions of the SWPPP. Runoff could eventually flow to the San Jacinto River and Temescal Wash, which flow to Lake Elsinore. However, runoff water would likely percolate into the alluvial soils before reaching drainages or surface water. A small retention basin would also be constructed on the Fogarty Substation site in order to impound runoff and reduce erosion. Drips and spills during construction would be contained on-site before they could be released to storm water. The SWPPP for hazardous materials is addressed in D.9 Hazards. The potential for water quality impacts to the San Jacinto River and Temescal Wash are low but would be further reduced or avoided through implementation of BMPs and erosion control measures in the entire project area during construction.

Construction impacts for improvements to the Valley and Ivyglen Substations would not involve additional ground disturbance and would not alter the existing substation drainage or expose pollutants to storm water flows. Pursuant to the permitting process, impacts associated with runoff water and polluted runoff would be less than significant.

Operation of the proposed subtransmission line, telecommunications line, and associated substations would not create or contribute to runoff water that would exceed the capacity of existing or planned storm water drainages systems or provide substantial additional sources of polluted runoff. Runoff volumes are not forecasted to be substantial. Therefore, the runoff would not exceed the capacity of the proposed retention basin or planned storm water drainage systems. An on-site retention basin would be constructed to minimize runoff from Fogarty Substation. Therefore, impacts associated with storm water capacity and polluted runoff would be reduced to less than significant (Class II) with the adoption of Applicant Proposed Measures HYDRO-SCE-1, 2, 3, and 4 and MMs HYD-5a and HYD-5b.

Mitigation Measures for Impact HYD-5

MM HYD-5a: The environmental training and monitoring program identified in HYDRO-SCE-2 shall be reviewed and approved by the Santa Ana RWQCB for compliance with the Santa Ana Water Quality Control Plan prior to initiation of construction. Verification of approval shall be provided to the CPUC at least 60 days before construction.

MM HYD-5b: The SWPPP discussed in HYDRO-SCE-1 and 3 shall be reviewed and approved by the Santa Ana RWQCB for compliance with the Santa Ana Water Quality Control Plan prior to initiation of construction. Verification of approval shall be provided to the CPUC at least 60 days before construction.

Impact HYD-6: Water quality

Construction of the proposed subtransmission line and telecommunications line could impact surface water quality in the project area. Surface water quality could be diminished as a result of: 1) foundation excavation in the vicinity of pole locations; 2) scraping and grading, and material laydown at pull sites/laydown areas; 3) constructing culverts in ephemeral creeks; and 4) grading to construct new access roads.

Operation of the proposed subtransmission line and telecommunications line would have no impacts on water quality. Telecommunications lines would operate from within the duct banks and on proposed subtransmission line poles. Occasional maintenance would be required, but maintenance work would not likely require ground disturbance that could cause erosion and sedimentation. Therefore, no impacts to water quality would occur.

Improvements to the Valley and Ivyglen Substations would not violate water quality standards or discharge requirements because of little ground disturbance or generated surface runoff. The substation improvements would have no impact on water quality in nearby drainages.

As stated in previous subsections, permit requirements would ensure water quality is maintained at acceptable levels as the Project would need to comply with all of the Santa Ana RWQCB water quality standards and/or drainage discharge requirements. Thus, impacts related to substantial water quality degradation would be less than significant (Class III).

Impact HYD-7: Flood hazard zones

Portions of Segments E-1, C-6, W-3, and W-6 of the proposed subtransmission line and telecommunications line would be constructed within 100-year FEMA designated flood hazard zones. The Applicant's engineering design for poles would take into account that the base of some poles in these segments could be in flood zones and would thereby avoid any adverse effects related to construction such as potential displacement.

The impact of construction of the telecommunications line poles would be the same as the construction of the proposed subtransmission line and would not be significant. The construction of the underground portions of the telecommunication lines would not increase risks of flooding. The most eastern portion of the telecommunications line slated for underground construction would be installed in an area included within the 100-year flood zone. Underground segments of the telecommunications line would be designed to withstand periods of flooding or inundation and would not be significantly affected by flooding.

The Fogarty Substation would not be constructed within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The Fogarty

Substation site is not within a designated 100-year or 500-year flood zone, or a dam failure flood inundation zone; therefore, there would be no significant impact related to flooding for the construction of the Fogarty Substation.

The Valley Substation is located within a FEMA-designated 100-year flood hazard zone, while the Ivyglen Substation is not. Upgrades to both substations would be consistent with the existing design of the substations and would minimize effects to equipment from potential flooding.

Operation of the proposed subtransmission line and telecommunications line Segments E-1, C-6, W-3, and W-6 would bear the same impacts as during construction. As discussed previously, the Project would be constructed to take into account that the base of some of the poles and the Valley Substation are in a 100-year floodplain. There are no operation impacts as a result of flooding associated with the Fogarty and Ivyglen Substations.

As a result, impacts associated with flooding would be reduced to less than significant (Class II) after implementation of MMs HYD-7a and HYD-7b.

Mitigation Measures for Impact HYD-7

MM HYD-7a: Aboveground project features such as the TSPs, poles, underground conduit, and substation shall be placed outside the flow path of watercourses unless an engineering analysis, reviewed by the CPUC, demonstrates that watercourse avoidance is not practicable, and that appropriate flood avoidance measures, such as raising foundations, have been taken to identify and prevent potential flooding and erosion hazards. The Applicant shall provide documentation to the CPUC at least 60 days before the start of the construction regarding which structures would be in flow paths and what protective measures, such as design specifications, are proposed.

MM HYD-7b: Ensure all National Flood Insurance Program (NFIP) building requirements are followed.

Impact HYD-8: Structures that impede or redirect flood flows

Portions of the proposed subtransmission line and telecommunications line would be installed within a FEMA designated 100-year flood hazard zone and dam inundation zones. The poles may be exposed to flood conditions but would not redirect flows to increase local flooding. The project poles have a small footprint and would not substantially alter or spread flood flows. All upgrades to the Valley Substation, despite its location in a 100-year flood hazard zone, will be made on an existing footprint and have no impact on redirecting or impeding flood lows. Therefore, impacts from construction and operation of the proposed subtransmission line, telecommunications line, and Valley Substation upgrade related to flooding would be reduced to less than significant (Class II) with the implementation of MMs HYD-7a and 7b.

The Fogarty Substation and Ivyglen Substation are not located in a 100-year flood zone and would therefore have no significant impacts related to flooding (Class III).

Impact HYD-9: Flooding as a result of failure of a levee or dam

Parts of the proposed subtransmission line Segments E-1, C-6, W-3, and W-6 and the Valley Substation are in designated 100-year flood hazard zones and dam failure flood inundation areas. The proposed subtransmission line and telecommunications line poles have a small footprint and will be designed to account for potential flooding impacts such as periods of inundation. The Valley Substation already exists and any upgrades will not alter its exposure to flooding. Any impacts to flooding as a result of a failure or

a levee or dam would be reduced to less than significant (Class II) with the implementation of MMs HYD-7a and 7b.

The Fogarty Substation and Ivyglen Substation are not located in a dam failure flood inundation zone and would therefore have no significant impacts (Class III) related to flooding as a result of failure of a levee or dam.

Impact HYD-10: Inundation by seiche, tsunami, or mudflow

Lake Elsinore is the largest enclosed body of water in the project area, with the closest segment of the proposed subtransmission line and telecommunications line being approximately two miles from Lake Elsinore. The line would not be subject to inundation by seiche. Therefore, no impacts to the Project would occur from seiches (Class III). Most of the proposed subtransmission line route would be located on relatively flat terrain, far from steep slopes in the region most susceptible to mudflows. Therefore, potential impacts to the proposed subtransmission line and telecommunications line associated with mudflows would be less than significant. In addition, the project area is over 20 miles from the Pacific Ocean and not subject to inundation by tsunami. There would be no impact to the Project from a tsunami. Therefore, due to the topographic position, geologic conditions, and lack of nearby or up slope water bodies, there would be no impact to the Project as a result of inundation by seiche, tsunami, and mudflow (Class III).

D.7.4 Cumulative

Riverside County is projected to experience marked residential and commercial development over the next twenty years. This projected and recent development has required and will continue to involve many large scale construction projects that will result in increased impervious surfaces, increased population (and need for drinking water), excavation and grading activities as well as construction of buildings, homes, and other structures. Cumulative impacts to hydrology and water quality would be minimized through measures required by federal, state, regional, and local laws, codes, and other regulations.

The Project traverses the San Jacinto Valley and the Santa Ana watersheds. Surface waters located in the vicinity of the Project include San Jacinto River, Canyon River, and Corona Lake (a reservoir on the Temescal Wash). Additionally, Segments E-1, C-6, W-3 and W-6 pass through 100-year flood zones. For the purpose of this analysis, the geographic scope for the cumulative effect on hydrology and water quality encompasses the boundaries of the aforementioned watersheds, bodies of water, and flood zones. This combined area includes all major hydrological features that could be potentially impacted by the Project. Destruction of or degradation to this area would constitute a significant cumulative impact.

Construction of the Project would require the grading and excavating of access roads, installation of poles and underground conduits, and the removal of vegetation to lay foundations and meet safety codes; these activities have the potential to impact water quality through drainage and erosion, to deplete groundwater sources and increase wastewater through the creation of impervious surfaces, and to damage drainage systems though sediment runoff. The Applicant has proposed measures HYDRO-SCE-1 through -4 to prevent a cumulatively significant impact to water quality, groundwater, and drainage systems. In the proposed measures, the Applicant take preventative steps and will prepare response plans in the case of accidental contamination of hydrological features including adopting a SWPPP, minimizing erosion and sedimentation during construction, preparing an environmental education and monitoring program, regulating high spill risk activities, and drafting dewatering plans with measures such as sediment traps and sediment basins. To ensure that the APMs meet regulations, this DEIR recommends the implementation of MMs HYD-5a and HYD-5b. Compliance with HYD-5a and -5b requires the Applicant to submit the environmental training program and the SWPPP to the Santa Ana RWQCB for review and

approval sixty days before the start of construction. Given both the APMs and the MMs outlined above, the Project would not substantially contribute to cumulative impacts to water quality, groundwater, and drainage systems (Class II).

Some of the poles required for the Project would be located in federally designated 100-year flood zones; the Valley Substation is located entirely within a 100-year floodplain. Adverse effects of construction to floodplains include displacement, and underground portions of the Project that pass through floodplains must be engineered to withstand potential flooding. MMs HYD-7a and -7b outline steps to minimize the impacts of the Project so as not to impede or re-direct flood flow. These require that, sixty days prior to construction, the Applicant submit to the CPUC an engineering plan that either avoids the flow path or, where avoidance is not practicable, employs appropriate measures such as raised foundations. Additionally, the MMs stipulate that all National Flood Insurance Regulations are followed. By implementing HYD-7a and -7b, the Project would not substantially contribute to cumulative impacts to flood paths within a 100-year floodplain.