Section 3.8

3.8 HYDROLOGY AND WATER QUALITY

This section describes existing conditions and the potential hydrology and water quality impacts associated with the construction and operation of the Proposed Project and alternatives.

3.8.1 Existing Conditions

The Proposed Project is located in northwestern Riverside County and southeastern San Bernardino County. Elements of the Proposed Project are located in the incorporated Cities of Beaumont, Banning, Calimesa, Redlands, and Yucaipa as well as unincorporated areas of Riverside and San Bernardino Counties.

3.8.1.1 Precipitation

Climatic conditions for Riverside and San Bernardino Counties are typical of inland areas of Southern California. The climate is dry, with an average annual precipitation in Riverside County of 10.7 inches. Record low and high rainfall is 5.3 inches and 21.4 inches, respectively.

In San Bernardino County, the average annual precipitation is 16.1 inches, with record low rainfall of 5.5 inches and a record high of 35.5 inches. The area receives the majority of its annual rainfall from January through March. Light winter snow can occur in the area at higher elevations, but snow is generally uncommon in the Proposed Project area (Western Regional Climate Center 2006).

3.8.1.2 Surface Water

3.8.1.2.1 Hydrologic Regions and Units in the Project Area. The area encompassed by the Proposed Project straddles the division between two major hydrologic regions (DWR 2003): the Colorado River Hydrologic Region to the east and the South Coast Hydrologic Region to the west. Within the South Coast Hydrologic Region, portions of the project would be located in the Santa Ana River and San Jacinto Valley Hydrologic Units, while within the Colorado River Hydrologic Region portions of the project would be located in the Whitewater Hydrologic Unit. Figures 3.8-1 and 3.8-2 and Table 3.8-1 show the hydrologic regions, units, areas, and subareas within the project area.

Santa Ana River Hydrologic Unit. The Santa Ana River Hydrologic Unit is located within the hydrological boundary of the South Coast Hydrologic Region. The Santa Ana River Hydrologic Unit is an arid region. As a result, there is little natural perennial surface water in the watershed. In the Santa Ana River Hydrologic Unit, flows consist mainly of snowmelt and storm runoff from the undeveloped land in the San Bernardino National Forest. River flow from Seven Oaks Dam to the City of San Bernardino consists mainly of storm flows,

TABLE 3.8-1
HYDROLOGIC DIVISIONS IN THE PROJECT AREA

Hydrologic Region	Hydrologic Unit	Hydrologic Area	Hydrologic Sub Area
South Coast	Santa Ana River	Upper Santa Ana River	Mill Creek
South Coast	Santa Ana River	Upper Santa Ana River	Reservoir
South Coast	Santa Ana River	San Timoteo	Beaumont
South Coast	Santa Ana River	San Timoteo	Yucaipa
South Coast	San Jacinto Valley	San Jacinto	Gilman Hot Springs
Colorado River	Whitewater	San Gorgonio	Banning

SOURCE: California Watershed Portal 2006.

flows from the Lower San Timoteo Creek, and groundwater that is rising due to local geological features. From the City of San Bernardino to the City of Riverside, the river flows perennially and much of this portion of the river is operated as a flood control facility.

Within the boundaries of the Santa Ana River Hydrologic Unit in the project area, elevations range from approximately 1,110 feet to the northwest to approximately 2,600 feet to the southeast. The portion of the route from the southeastern corner of the Santa Ana watershed that follows San Timoteo Canyon drops from approximately 2,600 ft in the east to approximately 1,560 feet to the west. The route then turns east and climbs to approximately 2,800 feet before turning north. The remaining northeastern portion of the route drops from 2,800 feet in the east end to approximately 1,110 feet to the west.

The principal tributary streams in the Santa Ana River Hydrologic Unit originate in the San Bernardino and San Gabriel Mountains. These tributaries include the San Timoteo, Reche, Mill, Plunge, City, East Twin, Waterman Canyon, Devil Canyon, and Cajon Creeks and University Wash from the San Bernardino Mountains; and the Lone Pine, Lytle, Day, Cucamonga, Chino, and San Antonio Creeks from the San Gabriel Mountains. West of Beaumont, Noble Creek drains into San Timoteo Creek. The San Timoteo Hydrologic Area drains westward from the San Gorgonio Pass into the Upper Santa Ana River Hydrologic Area, both of which are part of the Santa Ana River Hydrologic Unit.

The Santa Ana River Hydrologic Unit is under the jurisdiction of the Santa Ana Regional Water Quality Control Board, Region 8 (SARWQCB 1995). The 1995 Water Quality Control Plan designates beneficial uses for water bodies within the Santa Ana Region.

San Jacinto Valley Hydrologic Unit. The San Jacinto Valley Hydrologic Unit is located within the hydrological boundary of the South Coast Hydrologic Region. The southern

portion of the Project Area is located at the summit of the San Gorgonio Pass, which divides two major watersheds: the San Jacinto Valley Hydrologic Unit to the west and the Whitewater Hydrologic Unit to the east. The majority of the City of Banning drains east into the San Gorgonio Hydrologic Area of the Whitewater Hydrologic Unit. The drainage divide generally runs north-south near Highland Springs Avenue, ending in the San Bernardino Mountains to the north and the San Jacinto Mountains to the south. The region west of this divide is part of the San Jacinto Hydrologic Area, which is part of the San Jacinto Valley Hydrologic Unit.

Elevations within the project area rise to approximately 5,560 feet to the north and 2,880 feet to the south. East of the divide, in the southeast portion of the planning area, elevations fall to approximately 1,940 feet. The portion of the Proposed Project that travels through the San Jacinto Valley Hydrologic Unit is relatively small, only approximately 1.75 miles in length, and the elevation within this area is relatively flat, ranging from a high of 2,600 feet at the western end, and gently sloping downward to approximately 2,520 feet at the eastern end. The southern portions of the planning area are located on the floor of the San Gorgonio Pass, with the northern portions extending into the San Bernardino Mountains (City of Banning 2004; US Geological Society 1992).

To the west of the peak of San Gorgonio Pass is an area that drains generally south into Potrero Creek. The existing transmission lines cross Potrero Creek to the east of the Beaumont Substation. Potrero Creek flows to the San Jacinto River within the San Jacinto Valley Hydrologic Unit. The San Jacinto Valley Hydrologic Unit drains into Canyon Lake and ultimately into Lake Elsinore.

The San Jacinto Valley Hydrologic Unit is hydrologically isolated from the Santa Ana River, but is under the jurisdiction of the Santa Ana Region. The Water Quality Control Plan, Santa Ana River Basin-Region 8, designates beneficial uses for water bodies within the San Jacinto Valley Hydrologic Unit (SARWQCB 1995).

Whitewater Hydrologic Unit. The Whitewater Hydrologic Unit is located within the hydrological boundary of the Colorado River Hydrologic Region. The project area includes potential development within the San Gorgonio Hydrologic Area, the westernmost sub basin of the Whitewater Hydrologic Unit.

Elevations within the project area rise to approximately 2,570 feet in the west and slope downward toward the east to a height of approximately 2,220 feet. East of the Potrero Creek, drainage is Smith Creek and its tributaries, which flow into the east side of San Gorgonio Pass. Smith Creek is tributary to the San Gorgonio River. The existing transmission line crosses Smith Creek within the City of Banning. The San Gorgonio River is a tributary stream to the Whitewater River, and is hydrologically considered to be part of the

Whitewater Hydrologic Unit. The Whitewater River flows southeast through the Coachella Valley into the Salton Sea.

The Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) has jurisdiction over water quality and permitting for the Whitewater Hydrologic Unit. Beneficial uses of streams and rivers within the Whitewater Hydrologic Unit are designated in the Water Quality Control Plan for the Colorado River Basin – Region 7.

3.8.1.2.2 Surface Waters in Project Area. There are few large, confined bodies of water within the project area. The surface waters adjacent to or crossed by the Proposed Project facilities include the streams and water bodies shown in Table 3.8-2. The surface waters in the Project Area are shown in Figure 3.8-3.

TABLE 3.8-2
WATERSHED AND DRAINAGE CROSSINGS FOR THE PROPOSED SOUTHERLY 115 KV SUBTRANSMISSION LINE ROUTE

Hydrologic Area	Milepost Extent (approximate)	Drainage Crossings	Milepost Extent (PR)
San Timoteo	Milepost 0 to 7.5	San Timoteo Wash	PR MP 3.6-5.5
San Jacinto	Milepost 7.5 to 9.4	Potrero Creek	PR MP 8.9
San Gorgonio	Milepost 9.4 to 13.6	Smith Creek	PR MP 10.1
San Gorgonio	Milepost 9.4 to 13.6	Montgomery Creek	PR MP 12.4

SOURCE: California Watershed Portal 2006, Southern California Edison 2006.

3.8.1.3 Groundwater Resources

3.8.1.3.1 Colorado River Basin Region. The City of Banning is under the jurisdiction of the (CRBRWQCB). It overlies the eastern portion of the Coachella Valley Groundwater Basin. The Coachella Valley Basin extends from the City of Banning east to the Salton Sea. The San Gorgonio Pass sub-basin underlies the City of Banning. Approximately 15 miles long, this sub-basin is located in an east to west trending narrow valley between the San Jacinto and San Bernardino Mountains. The City of Beaumont is at the western end of the sub-basin, just outside the summit of the drainage area. The City of Banning has historically pumped groundwater from storage units located within the San Gorgonio Pass sub-basin in Banning Canyon (City of Banning 2004).

3.8.1.3.2 Santa Ana Region. The City of Beaumont is under the jurisdiction of the SARWQCB. This region encompasses the Santa Ana River and San Jacinto Hydrologic Units. The City of Beaumont overlies the San Timoteo Hydrologic Area located in the northern portion of the Santa Ana Region. Historically, the City of Beaumont water supply

has been drawn from the Beaumont Groundwater Storage Unit (BSU), which underlies the City and surrounding areas. The BSU is located within the Beaumont Hydrologic Sub Area of the San Timoteo Hydrologic Area. A portion of the Beaumont Storage Unit is located in the Banning City limits, though this storage unit is primarily located within the City of Beaumont. Both the Beaumont-Cherry Valley Water District and the City of Banning pump water from this storage unit (City of Banning 2004; DWR 2003).

3.8.1.4 Flooding Potential

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. The maps indicate the estimated level of inundation under various conditions and intensities. There are no areas within the Proposed Project that are within the 100-year flood hazard zones (FEMA 2006).

The San Timoteo Creek would flood in a severe storm and the Proposed Project may be located within that creek's 500-year flood flow area, although this determination is uncertain as the elevation plans for the access road were not specifically defined at the time of the study.

The route of the Northerly 115 kV Subtransmission Line Alternative passes through the flood plain of the Montgomery Creek within the San Gorgonio Hydrologic Area. At least a half-mile of the route within the Montgomery Creek drainage lies within the designated 500-year flood plain. Portions of San Bernardino County are also located within the designated 500-year flood plain, including the location of the Zanja Substation (City of Yucaipa 2006).

Regional flood control planning and facilities construction are within the jurisdiction of the Riverside County Flood Control District and the San Bernardino County Flood Control District. The Districts are also responsible for maintenance and operation of flood control facilities including debris, dams, storm channels, and storm drains.

Portions of the Proposed Project Area are in locations that are susceptible to flooding when heavy rains occur within steep mountainous areas. These floods can reach high velocities when they reach the valley floor. Drainages and other waterways in the area have the potential to overflow, causing flooding. The drainage areas within the Proposed Project Area that are particularly subject to flooding are those in the vicinity of the Smith and Noble Creeks (City of Beaumont 2005).

3.8.1.5 Site-Specific Conditions

This section describes the existing water resource conditions within the Proposed Project area.

3.8.1.5.1 Preferred Site

Surface Water. The Preferred Site (Site 33) for the El Casco Substation is located in an undeveloped area of San Timoteo Canyon, south of San Timoteo Road in unincorporated Riverside County. The Preferred site is located in the Reservoir Hydrologic Sub Area. The canyon area has low hills on the north and south and drainage that generally runs east to west.

Currently, the runoff from the substation site is from south to north, and drains to San Timoteo Creek. San Timoteo Creek flows southwest to northeast, where it later joins the upper reaches of the Santa Ana River south of San Bernardino.

San Timoteo Creek is located between the substation site and San Timoteo Canyon Road. The northeast corner of the Preferred Site is approximately 100 feet from the stream channel. San Timoteo Creek is a "Waters of the U.S." and "Navigable Water," as defined under the Clean Water Act, Sections 402 and 404.

Drainage. The Preferred Site is located in an area of alluvial valleys and hills. Hillsides are located to the southwest and southeast of the Preferred Site. The existing site slopes downward from south to north at an average slope of 40% in hillside areas and at an average of 5% in non-hillside areas.

The western portion of the site is predominantly located within a 125-acre watershed. The runoff from the watershed in general sheet drains from south to north. The eastern portion of the site is located on the perimeter of an adjacent watershed area that does not significantly impact drainage on the site.

There is a channel denoted on the U.S. Geological Survey [USGS] topographic map as a blue-line stream (Figure 3.8-4). The channel originates approximately 2,000 feet south of the site and flows toward San Timoteo Creek in a south to north direction. At approximately 800 feet south of the substation site, the channel fans out and becomes loosely defined. The channel remains this way along the substation site all the way to the San Timoteo Creek.

The U.S. Natural Resources Conservation Service and the U.S. Forest Service have mapped soil types and assigned hydrologic soils classifications in many areas of the Riverside County Flood Control and Water Conservation District (District). These soil classifications are shown in maps included in the District Hydrology Manual. The substation site soils have moderate infiltration rates when saturated and consist mostly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

Cover at the site can be classified as fair, being defined as moderate cover with 50 to 75 percent of the ground surface protected. Soil moisture conditions are described as having the lowest run-off potential due to the dryness of the site. The lack of a well-defined drainage channel at the Preferred Site indicates that stormwater from rainfall events during most years tend to infiltrate to the sub-surface rather than run off the site. Surface run-off from the canyons to the west, south, and upgradient of the site can be expected as a result of heavy winter storms.

Flooding Potential. The Preferred Site is not located within a FEMA designated 100-year or 500-year flood hazard zone as mapped by the Riverside County Transportation and Land Management Agency (TMLA) (Riverside County 1993).

Nonetheless, SCE commissioned a preliminary flood report, the "Preliminary Flood Hazard Report for the Oak Valley Substation" (Woodward 2006), to investigate Site 38, which is just north and west of the Preferred Site (on the north side of San Timoteo Creek). The study showed that elevations closest to the creek might be within a 500-year flood flow area. Several elements at the Preferred Site, such as the access road, driveway, 220 kV loop-in towers, and the 12 kV underground duct banks, are located within 150 feet of the creek and may therefore be located within a 500-year flood hazard zone.

Water Quality. Water in the upper Santa Ana River Hydrologic Unit tends to be high quality, with low concentrations of total dissolved solids, nitrates, and other pollutants (Advanced GeoEnvironmental, Inc. 2004). The RWQCB has adopted specific beneficial uses and water quality objectives for San Timoteo Creek (SARQWCB 1995). Designated beneficial uses for San Timoteo Creek include: AGR (Agriculture Supply), GWR (Ground Water Recharge), REC I (Water Contact Recreation), REC II (Non-Contact Water Recreation), WARM (Warm Freshwater Habitats) and WILD (Wildlife Habitat).

San Timoteo Creek is not currently listed on the Clean Water Act Section 303, a list of "impaired" waters in California.

Groundwater. The area in the valley along San Timoteo Road has perched ground water at depths of three to eight feet below ground surface (bgs).

SCE commissioned a preliminary boring and geotechnical report for the Preferred Site. The study showed that Boring 4 and Boring 7 encountered groundwater at shallow levels. Boring 4 was drilled at the north end of the Proposed Substation, approximately 300 feet from San Timoteo Creek. Boring samples at Boring 4 found moist soil between 10 and 15 feet below the surface, and wet soil at 15 feet. Boring 7 was drilled at the northeast corner of the substation site, approximately 120 feet from San Timoteo Creek. The report found that soil was moist at less than 4 feet and wet at 10 feet.

3.8.1.5.2 Banning Substation

Surface Water. The Banning Substation is located within the Banning Hydrologic Sub Area. The closest major drainage is the San Gorgonio River, located within the Whitewater Hydrologic Unit under the jurisdiction of the CRBRWQCB. The Banning Substation is located outside a FEMA designated 100-year flood zone, but is within a 500-year flood zone (Riverside County 1993).

Drainage. The Banning Substation is located within a developed portion of the City of Banning. Surface waters from the site drain into the city's stormwater drainage system.

Flooding Potential. The Banning Substation is located in a 500-year flood zone (Riverside County 1993). The Banning Substation site is not considered to have a significant flood hazard.

3.8.1.5.3 Zanja Substation

Surface Water. The Zanja Substation is located in the City of Yucaipa within the Reservoir Hydrologic Sub Area. The blue-line drainage (the Zanja drainage channel) shown on the Yucaipa topographic map (USGS 1992) is adjacent to the substation. The drainage is a tributary to Mill Creek. Mill Creek is a tributary to the Santa Ana River Hydrologic Unit and within the jurisdiction of the Santa Ana RWQCB.

Drainage. Surface waters in the vicinity of the Zanja Substation generally drain from east to west. Surface waters flow into Spoor Creek, which in turn drains into Mill Creek approximately 2 miles west of the Zanja Substation.

Flooding Potential. The Zanja Substation is not within a FEMA designated 100-year flood hazard zone, but is located within a 500-year flood hazard zone (City of Yucaipa 2006).

Water Quality. Water quality in the upper Santa Ana River Hydrologic Unit tends to be high, with low concentrations of total dissolved solids, nitrates, and other pollutants.

3.8.1.5.4. Southerly 115 kV Subtransmission Line Route

Surface Water. The approximate location of drainage crossings and floodways along the southerly 115 kV subtransmission line route and the West and South Maraschino Subtransmission Line Loops are summarized in Table 3.8-2 and are shown on Figure 3.8-5.

The City of Beaumont's location at the top of the San Gorgonio Pass causes streams in and around the City to drain into three distinct watersheds as defined by the California EPA (CWP 2006, CALEPA 2006). The southerly subtransmission line route would pass through three distinct watershed hydrologic sub areas, including (from west to east) the Beaumont

Hydrologic Sub Area of the San Timoteo Hydrologic Area, the Gilman Hot Springs Hydrologic Sub Area of the San Jacinto Hydrologic Area, and the Banning Hydrologic Sub Area of the San Gorgonio Hydrologic Area.

Drainage. Surface water drainage in the project area is generally from southeast to northwest, with waters flowing into various creeks and channels, including Montgomery Creek, Smith Creek, Potrero Creek, Noble Creek, and others, some of which are unnamed. The Montgomery, Smith, and Potrero Creeks all drain into the San Gorgonio River, while Noble Creek drains into San Timoteo Creek.

Flooding Potential. Portions of the proposed subtransmission line route cross FEMA designated 100-year and 500-year flood hazard zones south and southwest of the City of Banning. The route crosses adjacent to several bodies of water including Smith Creek, Potrero Creek, Noble Creek, San Timoteo Creek, and Montgomery Creek. The Smith and Noble Creeks have been subjected to flooding in previous years. The flood hazards are shown in Table 3.8-3 and Figure 3.8-5.

TABLE 3.8-3
FLOOD HAZARDS FOR THE PROPOSED SOUTHERLY 115 KV SUBTRANSMISSION LINE ROUTE

Flood Hazard	Hydrologic Area	Drainage	Milepost Extent (PR)
500-year	San Gorgonio	Unnamed	PR MP 11.5
100-year	San Gorgonio	Montgomery Creek	PR MP 12.3 to 12.5
100-year	San Gorgonio	Montgomery Creek	PR MP 12.8 to 12.9
500-year	San Gorgonio	Unnamed	PR MP 12.75 to 12.8; 12.9 to 12.95
500-year	San Gorgonio	Unnamed	PR MP 13.6 to 13.9

SOURCE: California Watershed Portal 2006, SCE 2006.

3.8.1.5.5 Fiber Optic System

Surface Water. The El Casco-San Bernardino segment of the proposed fiber optic system would be located within four watershed hydrologic sub areas, including 1) the Beaumont Hydrologic Sub Area, part of the San Timoteo Hydrologic Area, 2) the Reservoir Hydrologic Sub Area, part of the Upper Santa Ana River Hydrologic Area, 3) the Mill Creek Hydrologic Sub Area, also part of the Upper Santa Ana River Hydrologic Area, and 4) the Yucaipa Hydrologic Sub Area, part of the San Timoteo Hydrologic Area. All four of these hydrologic sub areas are located within the Santa Ana River Hydrologic Unit.

The El Casco-Banning segment of the proposed fiber optic system would be located within three watershed hydrologic sub areas, including 1) the Beaumont Hydrologic Sub Area, part of the San Timoteo Hydrologic Area, 2) the Gilman Hot Springs Hydrologic Sub Area, part of the San Jacinto Hydrologic Area, and 3) the Banning Hydrologic Sub Area, part of the San Gorgonio Hydrologic Area.

The El Casco-M29 T2 and El Casco-M30 T2 segments of the proposed fiber optic system would be located within the Beaumont Hydrologic Sub Area, part of the San Timoteo Hydrologic Area.

The Banning-M17 T1 segment of the system would be located within the Banning Hydrologic Sub Area, part of the San Gorgonio Hydrologic Area.

Drainage. The El Casco-San Bernardino segment of the proposed fiber optic system currently drains into a number of watercourses and city stormwater systems. The area from the El Casco Substation to the Yucaipa Substation drains in a generally east to west direction, with surface waters flowing into the San Timoteo, Live Oak, and Wildwood Creeks. The area of the segment from the Yucaipa Substation to the Zanja Substation generally drains into the stormwater drainage system of the City of Yucaipa. From the Zanja Substation to the Mentone Substation, the surface waters generally drain directly into the Zanja, Spoor, and Mill Creeks. From the Mentone Substation to the terminus of the new fiber optic system at the San Bernardino Substation, the surface waters generally drain into the stormwater drainage system of the City of Redlands.

The El Casco-Banning area of the proposed fiber optic system would have a similar drainage pattern as that of the Proposed Southerly Subtransmission Line Route, though for some portions of this segment of the fiber optic system, the surface waters would drain southwest to the surface water channels as opposed to northwest.

The surface waters in the vicinity of the El Casco-M29 T2 and El Casco-M30 T2 segments of the proposed fiber optic system would drain in a similar fashion to those on the proposed El Casco Substation Site.

The Banning-M17 T1 segment of the proposed fiber optic system would be largely located within a developed area of the City of Banning, and the surface waters in the area of this segment drain into the city's stormwater drainage system. The only exception would be the northernmost portion of this segment in the vicinity of the M17 T1 Transmission Tower, which would drain to the southwest into the San Gorgonio River.

Flooding Potential. Portions of the proposed fiber optic route cross FEMA designated 100-year and 500-year flood hazard zones south and southwest of the City of Banning. The proposed fiber optic line route is adjacent to several bodies of water in the area. These bodies

of water include the San Gorgonio, Smith, Potrero, Noble, San Timoteo, Live Oak, Yucaipa, Wildwood, Oak Glen, Gateway, Spoor, and Mill Creeks and the Santa Ana River. The proposed fiber optic line route crosses several of these bodies of water along the Proposed Route, including Smith Creek, Potrero Creek, Noble Creek, San Timoteo Creek, and Montgomery Creek. The Smith and Noble Creeks have been subjected to flooding in previous years.

3.8.1.5.6 Mill Creek Communications Site. The El Casco Substation site would be the location for the El Casco communications antenna tower. The site is described in Section 3.8.1.5.1. The following discussion describes the Mill Creek Communications Site.

Surface Water. The Mill Creek Communications Site is located within the San Bernardino National Forest in unincorporated San Bernardino County, on private property owned by SCE. The site is on Yucaipa Ridge, which drains to Mill Creek approximately 1 mile down gradient. Mill Creek is a tributary in the Mill Creek Hydrologic Sub Area of the Upper Santa Ana River Hydrologic Area, and is within the jurisdiction of the Santa Ana RWQCB.

Drainage. Surface water drainage in the vicinity of the Mill Creek Communications Site on Yucaipa Ridge is generally downslope to the north or south, with waters to the north draining toward Mill Creek, which in turn drains to the Santa Ana River.

Flooding Potential. The Mill Creek Communications Site is not located within a FEMA designated 100-year floodplain (FEMA 2006).

Water Quality. A portion of Mill Creek (designated Reach 1 of Mill Creek) is listed on the Clean Water Act Section 303 list of impaired waters in California for pathogens. No source-specific source for pathogens has been identified (State Water Resources Control Board Water Quality 2006).

3.8.1.6 Existing Conditions of Alternatives

This section describes the existing water resource conditions of the project alternatives.

3.8.1.6.1 Site 38 (Alternate Site)

Surface Water. The Alternate Site is located in the Beaumont Hydrologic Sub Area of the San Timoteo Hydrologic Area, similar to the Preferred Site. The Alternate Site is located north of San Timoteo Canyon Road, which is north of San Timoteo Creek. There are no "Waters of the United States (U.S.)" within the footprint of the Alternate Site.

Drainage. To the south of the Alternate Site is a natural channel with a well-established riparian zone. This channel serves as a major drainage within the San Timoteo Creek watershed and is a tributary to San Timoteo Creek. Surface waters in the area of the site

generally drain southwest into the natural channel. There is a grassy swale running along the base of the eastern hills, with no established riparian vegetation. Based on information received from the developer of the proposed subdivision to the north of the Alternate Site, runoff from the subdivision would be concentrated and discharged onto Site 38 at several locations. This runoff would have to be directed to the existing natural channel.

Flooding. Site 38 is not located within FEMA designated 100- or 500-year flood zones according to the flood zone map provided by the Riverside County Flood Control and Water Conservation District. However, based on SCE's investigation in the area (Woodward 2006), the Alternate Site is within a 500-year flow.

Water Quality. The Alternate Site is located to the northwest of the Preferred Site and is part of the Santa Ana River Hydrologic Unit. Water quality in the Santa Ana River Hydrologic Unit tends to be high, with low concentrations of total dissolved solids, nitrates, and other pollutants (Advanced GeoEnvironmental 2004). Designated beneficial uses for San Timoteo Creek include (AGR (Agriculture Supply), GWR (Ground Water Recharge), REC I (Water Contact Recreation), REC II (Non-Supply), WARM (Warm Freshwater Habitats) and WILD (Wildlife Habitat). San Timoteo Creek is not currently listed on the Clean Water Act Section 303, a list of "impaired" waters in California.

3.8.1.6.2 Northerly 115 kV Subtransmission Line Route Alternative

Surface Water. The northerly 115 kV subtransmission line route alternative is within the Santa Ana River Hydrologic Unit and the Whitewater Hydrologic Unit. Table 3.8-5 shows the watershed and drainage crossings for this alternative route.

Drainage. The subtransmission line route alternative along the El Casco-Banning 115 kV subtransmission line would largely drain to existing drainage systems including several creeks, as shown in Table 3.8-4. Portions of the alternative route would drain directly into the stormwater drainage systems of the Cities of Beaumont and Banning.

The approximate locations of drainage crossings and floodways along the northerly line route are summarized in Tables 3.8-4 and 3.8-5.

TABLE 3.8-4
WATERSHED AND DRAINAGE CROSSINGS FOR THE NORTHERLY 115 KV SUBTRANSMISSION LINE ROUTE ALTERNATIVE

Hydrologic Area	Watershed Extent (approximate)	Drainage Crossings	Drainage Mileposts (A1)
San Timoteo	A1 Milepost 0 to 7.5	San Timoteo Creek	A1 MP 0.25
San Timoteo		Unnamed	A1 MP 2.1
San Timoteo		Unnamed	A1 MP 3.9 to 4.3
San Timoteo		Little San Gorgonio River	A1 MP 4.5
San Timoteo	A1 Milepost 0 to 7.5	Noble Creek	A1 MP 5.3
San Jacinto	A1 Milepost 7.5 to 9.4	Smith Creek	A1 MP 8.3
San Gorgonio	A1 Milepost 9.4 to 13.6	Montgomery Creek	A1 MP 10
San Gorgonio		Unnamed	A1 MP 12

TABLE 3.8-5
FLOOD HAZARD ZONES FOR THE NORTHERLY 115 KV SUBTRANSMISSION LINE ROUTE ALTERNATIVE

Flood Hazard	Watershed	Drainage	Floodplain Extent by Milepost (A1)
100-year	San Jacinto	Potrero Creek	A1 MP 6.8
500-year	San Gorgonio River	Unnamed	A1 MP 11.5
		Unnamed	A1 MP 12
		Unnamed	A1 MP 12.3

3.8.2 Significance Criteria

Impacts to hydrology and water quality are considered potentially significant if the project 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 stormwater 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
- Expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow

3.8.3 Proposed Project Impacts

3.8.3.1 Construction Impacts

SCE would file a Notice of Intent (NOI) to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit would include the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The Proposed Project traverses more than one RWQCB jurisdiction; therefore, a complete Notice of Intent package (Notice of Intent, site map, and fee) and Notice of Termination (upon completion of each section), would be filed with each RWQCB. SCE would conduct all construction activities under the terms and conditions of the SWPPP.

Implementation of the SWPPP would help stabilize graded areas and waterways, and reduce erosion and sedimentation. The construction SWPPP would identify BMPs to be implemented during construction activities. Erosion control measures such as installation of

hay bales, water bars, covers, sediment fences, sensitive area access restrictions (for example, flagging), vehicle mats in wet areas, and retention/settlement ponds would be installed to protect San Timoteo Creek and other drainages before extensive clearing and grading begins. Mulching, seeding, or other suitable stabilization measures would be used to protect exposed areas during construction activities. Revegetation plans, the design and location of any retention ponds, and grading plans would be submitted to the California Department of Fish and Game (CDFG) for review for the construction near San Timoteo Creek and any other waterways.

SCE would obtain a grading permit from Riverside County for grading at the substation site and for grading the new access road. Application for and receipt of a grading permit from Riverside County, which requires a permit for the movement of 50 or more cubic yards of soil, would be preceded by preparation of a soils engineering and geology report as well as a project specific grading plan.

3.8.3.1.1 Preferred Site

The facilities that would be located at the substation site include:

- Substation
- 220 kV transmission line and 115 kV subtransmission line loop ins
- Underground duct banks for 12 kV distribution line getaways and fiber optic communications circuits
- Substation access road and loop in access road

Figure 3.8-4 shows the location of the proposed facilities at the El Casco Substation site.

Water Quality and Waste Discharge Requirements

Preferred Site. Substation construction would require excavation of approximately 285,000 cubic yards of soil and rock. The excavation would be followed by compaction of the El Casco Substation site and fill slopes. During construction, there is the possibility that the excavated material would be eroded into local drainages and San Timoteo Creek. San Timoteo Creek is approximately 100 feet from the northeast corner of the Preferred Site.

Construction of the Proposed Project would involve the use of a variety of potential sources of water quality degradation such as diesel fuel, lubrication oil, hydraulic fluids, antifreeze, and other construction related materials. If unchecked, these contaminants could be carried by runoff into local drainages and San Timoteo Creek. The possibility of either accidental releases or normal discharges from construction equipment and tools, and in turn their introduction into local drainage and water systems, would be minimal with implementation of SCE standard control procedures.

Site excavation during or prior to a rain event would increase the potential to cause erosion and sedimentation in San Timoteo Creek and the potential to have a significant effect on water quality. Construction activities conducted when the ground is wet would accelerate the potential for increased runoff due to a reduction in infiltration and evaporation. SCE would implement Best Management Practices (BMPs), mitigation measures (including mitigation measures HYDRO-1 and HYDRO-2), and SWPPP conditions to prevent transport of excavated sediments to local waterways and avoid significant effects to water quality.

In summary, impacts to water quality due to the construction of the El Casco Substation would be less than significant with the implementation of SCE BMPs, mitigation measures, and SWPPP conditions.

220 kV Transmission and 115 kV Subtransmission Line Loop-Ins. Three new double circuit lattice steel towers (LSTs) would be installed for the 220 kV Loop In. Each tower site would be graded or cleared to provide a relatively level pad, free of any vegetation that would hinder tower construction. The tower site (approximately 100 feet by 100 feet) would be graded such that no ponding or erosive water flow would occur that would cause damage to the tower footings. The graded pad would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicles.

Several geotechnical borings were obtained for the Preferred Site. Borings 4 and 7 encountered groundwater at shallow depths. Water in pier foundations could affect the stability of the tower. Dewatering operations would be implemented if groundwater was encountered while excavating or constructing the 220 kV transmission line loop in near San Timoteo Creek. Discharge of water pumped from excavation areas could have a significant effect on surface water through discharge of water high in sediment or other contaminants. Mitigation measures HYDRO-3, HYDRO-4, HYDRO-5, and HYDRO-6 would avoid significant effects to surface water.

The same erosion control measures used for construction of the substation would also be used for constructing the 220 kV and 115 kV loop-ins.

In summary, impacts to water quality due to the construction of the 220 kV and 115 kV loop-ins would be less than significant with the implementation of mitigation measures.

12 kV Distribution Line Getaways and Fiber Optic Duct Bank. Two underground duct banks, spaced 6 feet apart, and each consisting of six 5-inch conduits, would start at the southwest end of the 12 kV switchrack in the substation and would be routed towards the northeast corner of the substation site. Two (2) additional 5-inch conduits for the fiber optic communications cable would join each of those duct banks near the middle of the substation.

Near the northeast substation corner, the duct banks would enter separate 26-inch (internal dimension) bore casings that would be installed underground for about 300 feet, under both San Timoteo Creek and the adjacent railroad tracks. The duct banks would terminate in separate vaults on the south side of San Timoteo Canyon Road.

The installation of the duct banks from the 12 kV switchrack to the casing entrances at the northeast corner would be completed shortly after the overall rough grading work is done on the substation site. The measures prescribed to protect water quality during site grading would be used to avoid significant impacts from construction of the duct banks.

The boring to install the duct banks under San Timoteo Creek would be accomplished using horizontal directional drilling (HDD) techniques (this process is further described in Section 2.0, Project Description). A subcontractor experienced in this type of application would perform the HDD work, and only after applicable construction permits have been acquired. Standard practice for drilling an HDD crossing includes three phases to complete:

1. A small pilot hole is drilled initially to establish the crossing
2. The pilot hole is then reamed to the approximate diameter of the casing to be installed and the hole is conditioned to minimize any potential cave-ins
3. Finally, the casing(s) are pulled back into place

Once the casings are installed, the eight conduits would be placed inside, with spacers to maintain their configuration, and then a sand/cement slurry is used to fill any internal voids of the casing and provide additional structural support. The top of the casings would be approximately 8 feet below the bed of the creek.

The initial bore hole would be supported by a water-based drilling fluid, such as bentonite, which has several functions including transport of cuttings, cooling off the drill bit, sealing and supporting the drilled hole, and providing lubrication to reduce friction during the pullback phase. Drilling mud is typically a bentonite (clay) based material containing various chemical additives. Some chemical additives for specific types of drilling mud may not be compatible with shallow borings near domestic water supplies.

The HDD has the potential to cause an adverse effect on water quality in San Timoteo Creek. Water quality impacts to the creek could result from vertical leakage of drilling fluids in the formation over the boring, or transmission of hazardous materials from equipment during boring. Migration through existing natural fractures, induced fractures, or porous and permeable zones (gravels and cobbles) could allow drilling fluids to reach the surface. If drilling fluids reach the creek, they could degrade water quality and could cause a significant effect on water quality.

The HDD contractor would contain, handle, and dispose of drilling fluids in accordance with the following requirements specified by SCE and those specified in the SWPPP from the RWQCB in order to avoid significant effects to water quality:

1. A re-circulation system for drilling surface fluid returns shall be employed to minimize the amount of drilling fluid used. Residual materials separated from the drilling fluid shall be disposed of in accordance with applicable regulations.
2. All drilling fluid and fluid additives shall be disclosed, and Material Safety Data Sheets (MSDS) would be maintained on site during drilling.
3. Excess drilling fluid shall be confined in a containment pit at entry and exit locations until recycled or removed from the site.
4. Precautions shall be taken to ensure that drilling fluid does not enter roadways, streams, or any other drainage system or body of water.
5. Unintended surfacing of drilling fluid shall be contained at the point of discharge and recycled or removed from the site.
6. Drilling fluids that are not recycled and reused shall be removed from the site and disposed of at an approved disposal facility in compliance with all environmental regulations, right-of-ways and workspace agreements, and permit requirements.
7. Drilling fluids shall be completely removed from the construction site prior to back filling the open conduit pits.
8. Collection, transportation, and disposal of drilling fluids shall be conducted in an environmentally safe method and comply with local ordinances and government conditions. All drilling materials and fluids are the full responsibility of the contractor and SCE accepts no responsibility for their proper disposal.

SCE would obtain a Section 1600 Streambed Alteration Agreement from the CDFG, a Section 404 permit for dredge or fill to wetlands, and a Section 401 water quality waiver or permit if the HDD construction would occur within the Ordinary High Water Mark of San Timoteo Creek. SCE would comply with all permit conditions during construction of the duct bank.

SCE would implement industry standard BMPs, comply with permit conditions, and implement mitigation measure HYDRO-4 to reduce potential significant water quality impacts associated with the HDD activities for installation of the duct banks to a less than significant level.

In summary, impacts to water quality due to the construction of the 12 kV distribution line getaways and fiber optic duct bank would be less than significant with the implementation of mitigation measures.

Access Roads. An existing unpaved road connects San Timoteo Creek Road to the east with the El Casco Substation site. The Proposed Project includes improving 0.6 miles of this road by grading, compacting, and paving with asphalt. The alignment of the proposed access road was determined in consultation with Riverside County.

Improvement of the substation access road could cause an adverse impact to water quality in San Timoteo Creek by accelerating soil erosion rates and sedimentation in the creek and downstream waterways. The existing road is less than 5 feet from the creek bank in some locations. Uncontrolled runoff during road construction could accelerate and increase sedimentation in the creek. The net effects of road improvement could include an increase in turbidity within the creek, an increase in sedimentation due to erosion of soils during construction of the road, and a corresponding reduction of the creek's carrying capacity due to sedimentation. Also, construction of the road in close proximity to the creek could accelerate erosion of already unstable creek banks.

Mitigation measure HYDRO-7 is intended to avoid significant impacts to water quality from construction of the substation access road. SCE would also implement all other erosion control measures, BMPs, permit conditions, and Mitigation Measures to protect water quality during construction of the Substation access road to avoid significant effects from access road construction.

SCE also proposes to construct a spur road to provide access to the proposed three new LSTs for the 220 kV transmission line loop in. The approximately 200-foot long by 12-foot wide spur road would be graded from the existing substation site access road to the LSTs. Grading of the road would occur less than 150 feet from San Timoteo Creek. The grading has the potential to affect water quality in San Timoteo Creek, similar to the effects of construction of the substation access road described above. Significant effects to water quality in the creek would be avoided by implementation of the SCE BMPs, Mitigation Measures, and the SWPPP conditions.

The potential for significant effects to water quality would be avoided through implementation of SCE measures and BMPs, compliance with permit conditions, and implementation of Mitigation Measures. Implementation of these measures would reduce the potential impacts to surface water to less than significant levels.

In summary, impacts to water quality to the construction of the access roads would be less than significant with the implementation of mitigation measures.

Drainage

Preferred Site. The Preferred Site would be designed to address drainage in the following four areas: the hillside south of the substation, the substation pad, the rerouted channel that

originates southwest of the substation pad, and the access road. The topography of the region surrounding the Preferred Site is shown in Figure 3.8-4.

The hillside south of the substation would be recontoured and subject to an extensive cut with concrete drainage terraces constructed at every 25-foot vertical elevation drop. Graded slopes around the substation would be landscaped with native vegetation or other erosion control techniques such as hydromulching and erosion control fabrics to reduce potential stormwater erosion. Concentrated stormwater flow from the terraces would be routed around the substation and into drainage channels that would ultimately drain toward San Timoteo Creek.

The substation pad would be graded to provide a consistent two percent slope from south to north. The earthwork at the south end of the pad would require cut and at the north end would require fill. Drainage along the completed pad would be from south to north and be concentrated at the north end of the substation pad. Several channels would be designed to drain this concentrated flow down the fill slope outside the substation. Rip rap or other measures would be used at the bottom of the slope channels to dissipate the concentrated flow. The dissipated flow would be routed through vegetated swales, infiltration pits, or other measures to effectively dissipate and reduce the levels of potential contaminants and would then drain toward San Timoteo Creek.

The drainage plan would include rerouting the portion of a not readily identifiable blueline channel that is west of the Preferred Site. SCE proposes to improve this rerouted drainage channel to protect the integrity of the substation site and manage runoff to protect water quality in San Timoteo Creek. Rerouting a portion of this channel may require a Fish and Game Code Section 1600 Streambed Alteration Agreement from the California Department of Fish and Game.

The discharge from the rerouted drainage channel could cause erosion at the end of the constructed drainage feature and cause sheet or gully flow to San Timoteo Creek. The flow could potentially contain elevated levels of sediment and may potentially contain oil and grease from construction equipment. Significant effects to surface water would be avoided by implementing measures such as installing energy dissipating structures or other erosion and sediment control features at the end of the drainage to reduce the sediment load in the runoff. The measures would be designed in coordination with the RWQCB and CDFG. If the drainage design includes discharge to the creek, SCE would apply for a National Pollutant Discharge Elimination System permit for discharge to surface waters.

The rerouted channel would be constructed mostly on the Preferred Site. The natural direction of the existing channel appears to flow into the adjacent parcel (owned by the County of Riverside) to the west, prior to discharging into San Timoteo Creek. This occurs

within 200 feet of the creek bank. SCE would obtain the consent of the County of Riverside regarding this portion of the rerouted channel.

SCE would manage surface water flow around the substation site to avoid erosion and effects to water quality in San Timoteo Creek during construction of the Preferred Site. The implementation of the SWPPP permit conditions would further reduce impacts to erosion from the construction of the proposed substation to less than significant levels. Mitigation measure HYDRO-1 would avoid a significant impact and reduce effects of discharge to less than significant levels. SCE would also design the drainage in coordination with the County, the RWQCB, and CDFG to minimize effects.

Stormwater discharge to San Timoteo Creek would require an NPDES permit. Discharges of sediment and pollutants from runoff during construction could have an adverse impact to water quality in San Timoteo Creek. SCE would implement BMPs and mitigation measures to reduce the effects to less than significant levels.

In summary, impacts to surface drainage due to the construction of the Preferred Site would be less than significant with the implementation of BMPs, permit conditions, and mitigation measures.

220 kV Transmission Line and 115 kV Subtransmission Line Loop-Ins. The proposed transmission and subtransmission line loop ins would not cause rerouting of drainage in the area. Any erosion would be managed through BMPs, permit conditions, and mitigation measures.

In summary, impacts to surface drainage due to the construction of the transmission and subtransmission line loop ins would be less than significant with implementation of BMPs, permit conditions, and mitigation measures.

12 kV Distribution Line Getaways and Fiber Optic Duct Bank. The trenching and conduit installation would be designed to bore under the existing San Timoteo Creek drainage without affecting the groundwater or surface water quality, and the local drainage ways (see discussion above under water quality).

In summary, impacts to surface drainage due to the construction of the 12 kV distribution line getaways and fiber optic duct banks would be less than significant with the implementation of BMPs, permit conditions, and mitigation measures.

Groundwater

Preferred Site. The proposed substation improvements would not create substantial amounts of new impermeable surfaces that would reduce groundwater absorption rates. The project

would not include any facilities that would use groundwater and would therefore not deplete groundwater supplies.

The substation construction would include construction of a 14-acre enclosed substation site and associated facilities. The paving at and near the substation site would include:

- Asphalt access road—1.8 acres
- Crushed rock over compacted soil—10.5 acres
- Asphalt pavement—2.5 acres
- Concrete foundation—1.0 acre

The foundations for the loop in towers may cause a minor redirection in groundwater flow. The impact to groundwater would be less than significant.

Construction of the proposed substation would cause a slight increase in the amount of impermeable surface area and would slightly increase surface runoff. This impermeable surface would not significantly limit groundwater recharge in the area due to the extensive permeable surface in the 125-acre watershed area.

In summary, impacts to groundwater recharge due to the construction of the El Casco Substation would be less than significant.

Dewatering operations would be performed if groundwater is encountered while excavating or constructing the underground portions of the proposed fiber optic communications circuits. 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 Stormwater BMP Handbook. SCE would further reduce erosion impacts to San Timoteo Creek by measures such as obtaining an aboveground holding tank and placing pumped groundwater into the tank for sedimentation filtration. Sedimentation would then be filtered or decanted and the groundwater could then be discharged. The filtered water could be discharged to water or discharged to land in accordance with the RWQCB NPDES or Waste Discharge Requirements (respectively). Erosion control measures (included in the SWPPP) would avoid significant impacts to water quality.

The impacts of constructing the new duct bank at the El Casco Substation site would be less than significant with the implementation of BMPs, permit conditions, and mitigation measures.

12 kV Distribution Line Getaways and Fiber Optic Duct Bank. The effects of the duct bank construction are described above under *Water Quality.*

The boring for the duct banks could cause a temporary displacement of groundwater because the groundwater is shallow and the boring would be below the initial elevation of the groundwater. Construction would be short term and would not significantly affect groundwater quantity.

Implementation of BMPs, permit conditions, and mitigation measures would avoid significant impacts to groundwater.

In summary, impacts to groundwater recharge due to the construction of the 12 kV distribution line getaways and fiber optic duct banks would be less than significant with the implementation of mitigation measures.

Flooding

Preferred Site. The Preferred Site is not located within a FEMA designated 100-year or 500-year flood hazard zones as mapped in Riverside County. SCE commissioned a preliminary flood report, the "Preliminary Flood Hazard Report for the Oak Valley Substation" (Woodward 2006), to investigate Site 38 (Alternate Site). Because the study included San Timoteo Creek in its scope, it applies to the Preferred Site as well. The study showed that elevations closest to the creek may be within the 500-year flood flow area. Several elements at the Preferred Site, such as the access road, driveway, 220 kV loop in towers, and the 12 kV underground duct banks are located within 150 feet of the creek. Project construction in these areas could be affected by 500-year flows; however, the effects would be less than significant because SCE designs would accommodate the 500-year flow.

SCE would construct the lowest 220 kV tower support structure to be elevated above the highest adjacent grade, at least as high as the depth number specified in feet on the Flood Insurance Rate Map (at least two feet if no depth number is specified); or, site facilities would be flood-proofed to that level so that the structures are watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

SCE would design the site to protect people and equipment from adverse effects due to flooding.

The Proposed Project would not place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, would not place within a 100-year flood hazard area structures which would impede or redirect flood flows, and would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

The largest enclosed body of water near the proposed substation is approximately 1 mile west and downgradient of the Preferred Site. The proposed substation would not be subject to inundation by seiche or tsunami, or by dam failure inundation.

The Preferred Site would be located in an area that is not identified as subject to mudflows.

3.8.3.1.2 Banning Substation

Water Quality and Waste Discharge

The Banning Substation is located in an urban, industrialized area. The grading of up to 1.0 acre for construction of the new 0.5 acre-pad within the fenced area at the Banning Substation would not substantially increase the potential for erosion at the site.

Stormwater discharged from the Banning Substation during construction would be discharged to the City of Banning stormwater system. The City of Banning is a co-permittee in the Whitewater River Watershed Municipal Stormwater Program (MS4 permit). The MS4 permit for the Whitewater River Watershed was issued by the Colorado River Basin RWQCB and is administered by the County of Riverside Flood Control District. SCE would comply with all permit requirements during construction.

SCE would obtain coverage under the NPDES General Construction Activity Storm Water Permit. The permit is required for any construction activity that includes clearing, grading, excavation, reconstruction, and dredge and fill that results in the disturbance of at least one acre of total land area. The NPDES Storm Water Permit requires preparation of a site-specific SWPPP that would include measures to avoid any potential for generating polluted storm water runoff.

In summary, impacts to water quality and waste discharge due to the construction at Banning Substation would be less than significant.

Drainage

Construction of improvements at the Banning Substation would not alter any streams or other natural drainages. During new equipment installation, BMPs would be implemented to control storm water runoff to the existing drainage system at the site. Construction of Banning Substation improvements would not affect drainage patterns because the alterations would take place within the Banning Substation area, and only 0.5 acre of existing crushed rock surface would be impacted.

In summary, construction at Banning Substation would have no impact to drainage and erosion.

Flooding

Improvements to the existing Banning Substation would be designed to minimize the effects to equipment from potential flooding. The Banning Substation is not located within a FEMA designated 100-year flood hazard zone and there are no major water bodies nearby.

In summary, construction at Banning Substation would have no impact related to inundation from flooding, seiche, or tsunami.

Groundwater

The proposed Banning Substation improvements on 1 acre would not create substantial amounts of new impermeable surfaces that could reduce groundwater absorption rates and deplete groundwater supplies. The Project construction would not use groundwater.

In summary, construction at Banning Substation would have no impact to groundwater recharge.

3.8.3.1.3 Zanja Substation

Water Quality and Waste Discharge

Construction of a 0.2-acre pad would require up to 0.5 acres to be disturbed within the fenced Zanja Substation site. During new equipment installation, BMPs would be implemented to control possible storm water runoff from the site.

In summary, impacts to water quality due to the construction at the Zanja Substation would be less than significant.

Drainage

Construction and installation of improvements to the Zanja Substation would not alter any streams or other natural drainages. Zanja Substation improvements would not affect drainage patterns because the alterations would all take place within the Zanja Substation area.

In summary, construction at Zanja Substation would have no impact on drainage and erosion.

Flooding

The Zanja Substation is not within a FEMA designated 100-year flood hazard zone. Upgrades to the Zanja Substation would be designed to minimize effects to equipment from potential flooding. There would be no impact related to inundation from seiche or tsunami.

In summary, construction at Zanja Substation would have no impacts related to flooding, seiche, or tsunami.

Groundwater

The MEER and equipment construction and installation at the Zanja Substation would not create substantial amounts of new impermeable surfaces that could reduce groundwater absorption rates and deplete new groundwater supplies. The Project construction would not use groundwater. The Proposed Zanja Substation improvements would have no impact to groundwater recharge.

In summary, impacts to groundwater due to the construction at Zanja Substation would be less than significant.

3.8.3.1.4 Southerly 115 kV Subtransmission Line Route

Water Quality and Waste Discharge

Construction of the proposed 115 kV subtransmission line would include installing poles for construction of 900 feet of new subtransmission line, removal of existing subtransmission line wood poles, and installation of new steel poles. The Proposed Project would require installation of approximately 225 new steel poles in existing ROW and along city streets. The poles would include about 25% bolted-base tubular steel poles (TSP), and the remaining 75% would be direct-buried light weight steel (LWS) poles. Distribution lines would also be attached to the new poles where the existing wooden poles carry distribution lines.

Depending on their location, the assembly and erection of some of the new TSPs may require that a new crane pad, approximately 50 feet by 50 feet (approximately 0.06 acres) each, be prepared to allow an erection crane to set up 60 feet from the centerline of each TSP. The crane pad would be located transversely from each applicable TSP location. The grading required to create the pad for the crane could cause erosion at the site; however, the effects would not be significant due to the small size of the site and because SCE would implement industry standard BMPs, comply with the MS4 permit requirements, and apply mitigation measures as appropriate to reduce the impacts to drainage and water quality to less than significant levels.

LWS poles would be installed in holes bored approximately 24 to 30 inches in diameter and approximately 10 feet deep. LWS poles are normally installed using a standard utility line truck. Once the LWS poles are set in place, bore spoils (material from the bored holes) would be used to backfill the hole. If the bore spoils are not suitable for backfill, imported material, such as clean fill dirt and/or pea gravel, would be used. Excess bore spoils would be distributed at each pole site or used as backfill for the holes left after removal of nearby wooden poles.

TSPs would be installed on top of cylindrical concrete footings approximately 6-8 feet in diameter and approximately 20-25 feet deep. After holes for the footings are bored, a steel (rebar) cage would be inserted into the hole, and then concrete would be poured into the hole to a level 1-2 feet above the natural surface. After the concrete has cured, the TSP would be bolted onto the footing. Excess bore spoils would be distributed at each pole site or used as backfill for the holes left after removal of nearby wooden poles.

Any water encountered during pole installation would be treated as described above, under Section 3.8.2.1.1 to avoid adverse effects to water quality. The effects to water quality from discharge of groundwater from excavated sites would be less than significant.

Surface water quality could be diminished as a result of erosion from foundation excavation and grading, and material laydown at pull sites/laydown areas. Surface water quality could also be diminished as a result of discharges of sediments and other pollutants from: 1) dust and loose soil from vehicular traffic and foundation excavation in the vicinity of tower locations; 2) dust and loose soil due to scraping and grading; 3) pollutants, dust and loose soil from material laydown at pull sites/laydown areas; and 4) pollutants, loose and stockpiled soil from tower pad construction sites. If sediment-laden runoff from the construction sites entered 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.

In summary, impacts to water quality and water discharge due to the construction of the southerly 115 kV subtransmission line route would be less than significant with the implementation of SCE measures to control erosion, BMPs, and mitigation measures.

Drainage

The proposed subtransmission line route passes over several major drainages; however, pole construction would take place outside the ordinary high water mark of streams and would not impact surface water. The subtransmission portion of the Proposed Project occurs within existing ROW, and access roads are already in existence and are maintained on a regular basis. No new access roads are expected to be required for the 115 kV subtransmission line, although some grading may be required to reestablish roads if they are not passable by equipment. The proposed pole replacement activities would not alter drainages.

No jurisdictional wetlands would be impacted by subtransmission line construction; therefore, no Section 404 or Streambed Alteration Permit would be required for this construction.

Any steel poles that are replacing existing wood pole structures in existing ROW areas would be primarily installed at the same locations. The 50 by 50 foot crane pads that would be required to install the poles would not be constructed in drainages and would not alter drainages. The grading would be conducted using standard erosion control measures to prevent soils from eroding off site.

SCE'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 drainage.

In summary, impacts to drainage due to the construction of the southerly 115 kV subtransmission line route would be less than significant.

3.8.3.1.5 Fiber Optic System. SCE proposes to install a new fiber optic system that would consist of approximately 56 miles of fiber optic cable to be installed both overhead on existing poles or towers and underground in existing conduits and substructures from the El Casco Substation to the Maraschino, Banning, Zanja, Mentone, Crafton Hills, and San Bernardino Substations. Approximately 8 miles of the fiber optic cable would be installed in existing, underground duct banks.

Attachment to Existing Overhead Structures. The fiber optic cables would be attached to existing SCE wood and steel poles and towers. The majority of the lines would be located along city streets, and construction would generally not require new surface disturbance. No new access roads would be required but some grading may be required for road improvement. Some roads may require minor improvement, such as grading, to allow the trucks to access poles. Conductor pulling may require some grading for the 50 x 50 foot pulling locations. SCE would implement industry standard BMPs, comply with the MS4 permit requirements, and apply mitigation measures as appropriate to reduce the impacts to drainage and water quality to less than significant levels. SCE's SWPPP would include Best Management Practices, 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.

The stringing of the poles would not affect drainage or flooding, and would not use or affect groundwater.

In summary, the installation of the fiber optic cable on overhead poles and towers would not have a significant effect on water quality, drainage, flooding, or groundwater.

New Fiber Optic Circuit Poles. The construction of approximately four 40 foot tall wood poles would be required between the M30 T2 transmission tower (Figure 2.3-3) and the existing distribution line northwest of the tower. The installation of these poles would require

preparation of a level pad for construction. Holes, approximately 24 to 30 inches in diameter, would be bored approximately 6 feet deep. Wood poles are normally installed using a standard utility line truck. Once the wood poles are set in place, bore spoils (material from the bored holes) would be used to backfill the hole. If the bore spoils are not suitable for backfill, imported material, such as clean fill dirt and/or pea gravel, would be used. Excess bore spoils would be distributed evenly around each pole site. SCE would install standard erosion control features (such as hay bales, filter fabric, or other measures) to prevent erosion into existing drainages (as defined in Mitigation Measure Hydro-2C).

In summary, impacts to water quality, drainage, flooding and groundwater would be less than significant with the implementation of BMPs, permit conditions, and mitigation measures.

Installation in Underground Systems. The construction of the new underground 12 kV distribution getaways and the fiber optic cable within the El Casco Substation site is discussed above in section 3.8.2.1.1.

Underground portions of the line would generally not be located in close proximity to surface water and would not be placed deep enough to encounter groundwater. Fiber optic cable would be placed in the new duct bank proposed for the 12 kV line connecting to the El Casco Substation. This location is adjacent to San Timoteo Creek (see the impact discussion above in Section 3.8.2.1 for construction methods and environmental protection measures).

Construction of the underground fiber optic communications circuits in existing duct banks would include accessing the existing underground conduits at existing vaults and/or manholes. No surface disturbance is expected as a result of this installation.

SCE would be required to apply for coverage under the General Construction Activity NPDES Stormwater Permit. 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. Equipment leaks and spills, as described under construction of the subtransmission sine, would not present a significant threat to water quality.

In summary, impacts to hydrology and water quality due to the construction of the fiber optic system would be less than significant with the implementation of SCE BMPs, permit conditions, and mitigation measures.

3.8.3.1.6 El Casco and Mill Creek Communications Towers

El Casco. A proposed 85-foot tall, three-legged steel microwave antenna tower would be constructed adjacent to the MEER on the proposed El Casco Substation site. A temporary construction lay down area (60 feet by 60 feet) would be located within the substation site.

The tower would be constructed when the El Casco Substation site is nearly complete. The construction of the footings and assembly of the tower would not have a significant adverse effect on water quality, drainage, groundwater, or flooding.

SCE would implement industry standard BMPs, comply with permit requirements, and apply mitigation measures, which would ensure the impacts to drainage, water quality, and flooding are at less than significant levels.

Mill Creek Communications Site. A temporary construction lay down area (60 feet by 60 feet) would be necessary to install the new digital microwave terminal and digital multiplexer at the Mill Creek Site. The footings and assembly of the tower at the Mill Creek Communications Site would constructed to minimize erosion and work would not require additional ground disturbance or alter existing Communications Site drainage. The tower would be constructed using BMPs, permit conditions and mitigation measures to avoid impacts to hydrology and water quality.

Stormwater discharged off-site from the Mill Creek Communications Site during construction would be minimal. Stormwater runoff would flow to the existing site drainage. San Bernardino County is a co-permittee of the San Bernardino County Municipal NPDES stormwater permit. The San Bernardino County MS4 permit was issued by the Santa Ana RWQCB and is administered by the San Bernardino County Flood Control District.

SCE would implement industry standard BMPs, comply with the MS4 permit requirements, and apply mitigation measures as appropriate to reduce the impacts to drainage, water quality, and flooding to less than significant levels.

3.8.3.2 Operational Impacts

3.8.3.2.1 Preferred Site

Water Quality

Surface water and groundwater quality could potentially be affected by a mineral oil release from oil-filled electrical equipment at the proposed El Casco Substation. Such releases, either from slow leaks or complete rupture and spill, could wash into San Timoteo Creek or infiltrate to the shallow water table adjacent to the site. The federal CWA and the state Porter-Cologne Act prohibit the release of any oil to waters of the state. Riverside County requires that all necessary measures be taken to regulate runoff from urban uses to protect the quality of surface and groundwater from detrimental conditions. In the event of a release, surface or groundwater quality could be degraded.

SCE would prepare a Spill Prevention, Countermeasure, and Control (SPCC) plan for the proposed substation. The plan would include engineered and operational methods for

preventing, containing, and controlling potential releases (for example, by constructing containment walls or berms), and provisions for a quick and safe cleanup. The plan would be submitted to the Riverside County for review. Incorporation of SPCC measures into the project operation plan would reduce the impacts to water quality due to potential spills to a less than significant level.

Releases of pollutants from stormwater runoff have the potential to significantly affect water quality in San Timoteo Creek. Post construction, an NOI must be submitted for coverage under the industrial general permit for stormwater. SCE would develop and submit a Water Quality Management Plan (WQMP) to address water quality issues during operation.

Implementation of the WQMP under the industrial stormwater permit would reduce potential impacts to San Timoteo Creek to less than significant levels.

In the event of a fire to the transformers, water and foam would be used to suppress the fire. The water would become contaminated with the equipment's mineral oil, the foam, and other burned material. Cleanup of the contaminated water would be addressed in the operational SWPPP. During final engineering, SCE would design methods for containing this contaminated water within the substation parcel.

In summary, impacts to water quality due to operation of the El Casco Substation would be less than significant.

Drainage

The operation of the facilities at the El Casco Substation site would generally not affect drainage. The final engineering plans and permit applications (SWPPP) would define the site drainage. The drainages would be designed to accommodate site runoff from a 100-year flood event.

The implementation of the SPCC for the proposed substation would minimize the potential for spills and avoid significant impacts if spills occur.

In summary, the operation of the El Casco Substation, 220 and 115 kV loop ins, and the 12 kV and fiber optic duct banks would not have a significant impact on drainage.

Flooding

The Preferred Site, the 220 kV towers, and the 12 kV duct bank would be designed to address the level of surface flow and potential for flooding. The additional impervious surface for the substation caused by substation asphalt roads, concrete foundations, and the asphalt access road would slightly increase runoff. The increased runoff would slightly

increase the potential for flooding in the area. The increase in runoff would not be significant.

In summary, the operation of El Casco Substation would not have significant impacts related to flooding, seiche, tsunami, or dam failure inundation.

Groundwater

The increase in the amount of impermeable surface area at the Preferred Site would not significantly limit groundwater recharge in the area due to the extensive permeable surface in the area. Operation of the El Casco Substation would not use local groundwater.

In summary, the operation of the El Casco Substation would have no impacts on groundwater.

3.8.3.2.2 Banning Substation. Operation of the improvements at the Banning Substation would not affect water quality. The upgrades would not violate water quality standards or discharge requirements. The Banning Substation improvements would have no impact on water quality in nearby drainages.

The overall drainage plan at the Banning Substation would not change during operation of the Banning Substation improvements. The drainage for the new facility would be connected to the existing drainage system at the site. The improvements would be located within the substation fence on an approximately 0.5-acre pad. The construction of the pad would result in a slight increase in the runoff from the existing site.

The operation of the additional equipment would not change site drainage, and would not increase erosion. Operation of the site improvements would not require use of groundwater.

In summary, the operation of Banning Substation would have no impact on hydrology or water quality.

3.8.3.2.3 Zanja Substation. The overall drainage plan at the Zanja Substation would not change during operation of the Zanja Substation improvements. The drainage for the new facility would be connected to the existing drainage system at the site. The improvements would be located on an approximately 0.2-acre pad, which would slightly increase runoff from the existing site.

The operation of the additional equipment would not change the drainage or substantially change runoff at the site, and would not increase erosion. Operation of the site improvements would not require use of groundwater.

In summary, the operation of Zanja Substation would have no impact on hydrology or water quality.

3.8.3.2.4 Southerly 115 kV Subtransmission Line Route. SCE would visually inspect the proposed subtransmission lines at least once a year by driving and/or flying the route. Maintenance vehicles would use existing access roads and would not impact water quality.

In summary, the operation of the southerly 115 kV subtransmission line route would have no impact on hydrology or water quality.

3.8.3.2.5 Fiber Optic System. Operation of the fiber optic communications circuits would have no impacts on water quality. Occasional maintenance would be required, but maintenance work would not likely require ground disturbance that could cause erosion and sedimentation.

In summary, the operation of the fiber optic system would have no impacts to water quality or drainage.

3.8.3.2.6 El Casco and Mill Creek Microwave Communications Towers. The operation of the 85-foot tall tower at the El Casco Substation and the 110-foot tower at the Mill Creek Communications Site would have no impact on water quality and would not affect drainage or runoff.

3.8.3.3 Applicant Proposed Mitigation Measures

HYDRO-1. Grading activities at the Preferred Site and improved access road would not commence if heavy ran is forecast for the period of time of major earthmoving activities through compaction and stabilization of the site.

HYDRO-2A. An engineered erosion control and drainage plan would be developed as part of the site grading plan. The plan would be developed in accordance with the County of Riverside Hydrology Manual and would address all activities at the Preferred Site (including the areas of 220 kV transmission line and 115 kV Subtransmission line tie-ins and the duct banks). The location of the discharge of site runoff for construction would be defined in final engineering and in consultation with Riverside County, the RWQCB, and the CDFG. The plan would include measures for stormwater energy dissipation in areas subject to concentrated flow. Energy dissipation measures would include rip-rap, weirs, natural vegetation, gabions, or other measures. Infiltration pits, sediment filter fabrics, fabric rolls, vegetated swales, or other measures would be used to protect water quality. The energy dissipation plan would be designed to prevent impacts to the riparian channel from high energy discharges and the discharge of fluids with high levels of sediment or other

detrimental contaminants. These energy dissipation and erosion control measures could require the use of land on the Preferred Site parcel or between the parcel and creek.

HYDRO-2B. If any Project construction requires that a watercourse be altered or relocated, the flood carrying capacity of the altered or relocated portion of the watercourse shall be maintained. Adjacent communities, the California Department of Water Resources, California Department of Fish and Game (Section 1600 Streambed Alteration Agreement), and FEMA shall be notified of any such alteration or relocation. Plans to meet the above requirements shall be prepared and certified by a civil engineer registered in the State of California.

HYDRO-2C. SCE shall develop an erosion control plan incorporating construction-phase measures to limit and control erosion and siltation. The erosion control plan shall include components such as: phasing of grading, limiting areas of disturbance, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection, and provision for revegetation or mulching. The plan shall also prescribe treatment measures to trap sediment once it has been mobilized, at a scale and density appropriate to the size and slope of the catchment. These measures typically include: inlet protection, straw bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing, and siltation or sediment ponds.

HYDRO-2D. An environmental training program would be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures, to all field personnel involved in the construction of the Proposed Project elements. A monitoring program would be implemented to ensure that the plans are followed throughout the period of construction.

HYDRO-3. In the event that excess water and liquid concrete escapes from pole foundations during pouring, it would be directed to bermed areas adjacent to the borings where the water would infiltrate or evaporate and the concrete would remain and begin to set. Once the excess concrete has been allowed to set, but before it is dry, it would be removed and transported to an approved landfill for disposal.

HYDRO-4. If groundwater is encountered while excavating or constructing the Subtransmission Line, it would be tested for contaminants, and if none are found, would be contained and disposed of in accordance with all applicable federal, state, and local regulations.

HYDRO-5. Dewatering would involve pumping water out of excavations to allow construction of the pier footings. Water produced during dewatering activities would include sediment from the excavation, and could include lubricants used in the pumping process. During dewatering, SCE would, as applicable, use measures to avoid adverse effects related

to discharging the water. Measures may include sediment traps and sediment basins in accordance with BMP NS-2 (Dewatering Operations) from the California Storm Water Quality Association's (CASQA) California Stormwater BMP Handbook. Measures may also include using above-ground holding tanks and pumping the water in the excavated area into the tank for sedimentation filtration. Sediment would then be filtered or decanted prior to discharge into the prescribed drainage location.

HYDRO-6. The HDD contractor shall be provided with copies of all applicable mitigation measures and permit conditions so that construction activities associated with the installation of the 12 kV and fiber optic conduit duct banks would be conducted in accordance with NPDES requirements. Measures to mitigate potential water quality impacts may also include, but not be limited to, the following measures:

- Use mulch, seed, or gravel to disturbed areas for the purpose of providing temporary erosion protection
- Cover spoils piles with a tarp or contain within a sediment barrier
- Use sediment barriers such as silt fences, sand bags, straw bails, rock checks and/or sediment traps to contain sediment on site

HYDRO-7. Prior to final engineering of the proposed access road to the Preferred Site, SCE would consult with Riverside County, CDFG, and the Santa Ana RWQCB regarding the location of the access road. The access road should be located 25 feet from the top of the creek bank. The existing access road should be reclaimed and revegetated with native vegetation determined by a qualified biologist in consultation with CDFG.

HYDRO-8. SCE would prepare a Hazardous Substance Control and Emergency Response Plan, which would include preparations for quick and safe cleanup of accidental spills. This plan would be submitted to agencies with the grading permit application. It 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. Oil-absorbent materials, tarps, and storage drums would be used to contain and control any minor releases of mineral oil that may occur at the Preferred Site.

3.8.4 Alternatives

3.8.4.1 Northerly 115 kV Subtransmission Line Route Alternative

Construction of the northerly 115 kV subtransmission line alternative would have erosion, water quality, drainage, and groundwater impacts similar to those of the southerly 115 kV

subtransmission line. All mitigation measures related to the southerly 115 kV subtransmission line route would apply to the alternative route.

Flooding

The route of the northerly 115 kV subtransmission line route alternative passes through the flood plain of the Montgomery Creek within the San Gorgonio River watershed. The area adjacent to Montgomery Creek within the City of Banning has historically been highly vulnerable to flooding. At least 0.5 miles of the route within the Montgomery Creek drainage lies within a FEMA designated 500-year flood plain. Construction of the towers within this area would result in a significant impact if flooding resulted in the discharge of pollutants, construction materials, or sediments into the waterway. The California Environmental Quality Act (CEQA) criteria do not consider 500-year flood hazard zones to be a significant impact to a Project. SCE would implement engineering design for poles that would take into account that the base of some poles could be in flood zones during extreme conditions and thereby avoid the adverse effects (potential displacement) related to construction of the alternate Subtransmission Line. This would further reduce the impacts related to flooding to less than significant levels.

All mitigation measures related to drainage that were identified for the Proposed Project would apply to this alternative. The implementation of the northerly 115 kV subtransmisson line route alternative would have less than significant effects.

In summary, impacts to hydrology and water quality due to the construction and operation of the northerly 115 kV subtransmission line route would be less than significant with the implementation of mitigation measures.

3.8.4.2 Site 38 (Alternate Site)

Construction of the El Casco Substation at Site 38 would have similar impacts to hydrology and water quality as the Preferred Site. The locations of the Preferred Site and the Alternate Site, as well as the surrounding topography, are shown on Figure 3.8-6. Because of space constraints on the Alternate Site, the substation configuration would be altered to approximately parallel an existing drainage channel located along the length of the southern perimeter of the substation. This channel has the potential for meandering, including erosion to the existing banks, and flooding (Woodard 2006). Therefore, the grading design would implement measures to protect the substation against the bank meandering beyond its current banks and in to the substation. These measures could include subsurface gabions, a subsurface wall, and surface rip rap along the channel side of the substation. The measures would not alter or reroute the existing channel or disturb the riparian area. The design elevations would be higher than studied flooding levels.

Potential impacts to hydrology and water quality from the operation of Site 38 would be similar to the potential impacts from the Preferred Site. The same BMPs, permit conditions, and mitigation measures as those described for the Proposed Project would be required for the construction and operation of the Alternate Site. These measures could reduce impacts to hydrology and water quality to less than significant levels.

In summary, impacts to hydrology and water quality due to the construction and operation of the substation at the Site 38 site alternative would be less than significant with the implementation of mitigation measures.