3.4 WATER RESOURCES

This section describes the water resources within the project area and presents an assessment of potential water resources impacts of the Proposed Project and alternatives. Where appropriate, mitigation measures that could reduce, eliminate, or avoid potential adverse impacts to water resources resulting from implementation of the Proposed Project are presented.

The project area is located in a desert environment with limited water resources. Consequently, the protection of water resources in this area is a primary concern to federal, state, and local government.

3.4.1 AFFECTED ENVIRONMENT

The project area is defined here specifically as the terrain near the Proposed Project facilities and alternative transmission line alignments, and generally as the area encompassed by all of these alternatives. Figure 3.4-1 shows groundwater basins within the project area. From east to west, the northern alignments, which include the Proposed Project and Alternatives A and C, pass through portions of the Palo Verde Mesa, Chuckwalla Valley, Orocopia Valley, and Coachella Valley. Each of these valleys represent a groundwater basin as defined by the California Department of Water Resources (DWR) (DWR 1975 and 1980). From a water resources standpoint, the differences between the Proposed Project and Alternatives A and C are generally negligible.

The route for the southern alignment alternative (Alternative B) diverges from the northern alignments shortly after their common origin at the proposed Keim Substation/Switching Station near the Blythe Energy project. This alignment trends south-southwest through the Palo Verde Mesa passes along the eastern edge of the Arroyo Seco Valley, and into the Amos Valley sub basin. It turns northwest, near the Algodones Dunes, passing through Amos Valley and into the East Salton Sea Basin.

All four of the alternative transmission line routes start in the southeastern Mojave Desert and pass into the Sonoran Desert. The Mojave Desert is a transitional zone between the hot Sonoran Desert to the south and the cooler and higher Great Basin Desert to the north. This arid region of southeastern California and portions of Nevada, Arizona and Utah occupies more than 25,000 square miles. South of the Mojave Desert is the Lower Colorado Valley Region, the hottest, driest, and largest region of the Sonoran Desert. The regional hydrologic setting for these areas, including regional precipitation patterns, surface water, and groundwater resources, are discussed below.

3.4.1.1 Precipitation

Precipitation throughout the project area is very low, ranging from approximately 2.5 to 4 inches annually. Most of the rainfall occurs from August through March. The region generally has two rainy periods, winter precipitation from October through March, and the monsoon season from late July through September. Monsoonal events during the summer can result in heavy local rainfall and flash flooding events. Precipitation data for locations within or near the general project area is provided in Table 3.4-1. Data for Blythe, El Centro, and Mecca is from the interval 1948 to 2000. Data for Brawley and Indio is from 1927 to 2000.

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Figure 3.4-1
Ground Water Basins

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Table 3.4-1
Mean Precipitation in Project Area (inches)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Blythe Airport	.48	.40	.34	.18	.02	.02	.27	.68	.38	.26	.19	.44	3.65
Brawley	.40	.36	.26	.08	.03	.01	.06	.35	.30	.23	.17	.46	2.69
El Centro	.49	.28	.23	.06	.02	.00	.09	.31	.26	.29	.20	.36	2.60
Indio	.60	.48	.32	.09	.05	.01	.12	.26	.34	.18	.28	.46	3.19
Mecca	.62	.40	.26	.08	.03	.01	.15	.21	.31	.24	.26	.33	2.89

Source: WRCC.

The region has cool winters and hot summers. High temperatures and frequent winds during the summer produce a high rate of evapotranspiration. Evaporation is very high from April to October when the region has average maximum temperatures above 80 ºF. Summer temperatures in excess of 100 ºF are common. Potential evapotranspiration rates greatly exceed annual precipitation.

The distribution of rainfall in the project area is influenced by topography, with mountainous areas receiving greater precipitation than valleys and low-lying areas. Mountainous areas typically have steep slopes and shallow soils, resulting in rapid shedding of the rainfall into valleys. Generally, the valleys contain thick alluvial deposits, washed from the mountains, where surface flow infiltrates and provides minor recharge to groundwater basins (Metzger et al. 1973).

3.4.1.2 Surface Water Hydrology

The project area lies within the Colorado Desert Hydrologic Study Area. High summer temperatures, little vegetative cover, and ephemeral drainage channels characterize this area (DWR 1975). Figure 3.4-2 shows water features within the project area. With the exception of channels that feed the Colorado River, the project area is characterized by internal drainage (terminating in closed basins). Some channels in the project area drain into the Salton Sea (which occupies a closed basin) or into canals.

The Proposed Project and Alternatives A and C pass between the Colorado River Aqueduct and the Coachella Canal in the Coachella Valley, but do not cross these features. Alternative B crosses the Coachella Canal and the East Highline Canal and runs beside it for the last half mile to the Midway Substation. The region's low precipitation rate, high evaporation rate, and typically highly permeable soils in the local washes preclude the existence of perennial streams in the area. However, flow in these washes can be substantial during wet weather resulting in localized flash flooding in streambeds and floodplains, and the potential for significant erosion.

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Figure 3.4-2
Surface Features Map

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Table 3.4-2 presents general information on the hydrologic basins traversed by the proposed and alternative project routes.

Table 3.4-2
Hydrologic Basins in the Project Area

Basin Number	Name	Area (sq. mi)	Major Drainage	Well Depths (feet)	Pertinent Route
7-5	Chuckwalla	870	Internal	50-220	A, C
7-31	Orocopia	150	Intermittent Streams	Information not available	A, C
7-21.01	Coachella (Indio Subbasin)	525	Whitewater River	47-1420	A, B, C
7-33	East Salton Sea Basin	150	Salt Creek	40-200	B
7-34	Amos Valley	220	Unnamed streams	150-500	B
7-37	Arroyo Seco Valley	430	Arroy Seco Wash	50-200	B
7-39	Palo Verde Mesa	280	Unnamed streams	100-800	A, B, C

Source: DWR 1975 and 1980.

3.4.1.2.1 Proposed Project and Alternatives A and C

The northern alternatives traverse west from Blythe passing through the Palo Verde Mesa and the Chuckwalla, Orocopia, and Coachella Valleys. En route they pass the McCoy and Palen Mountains (well north of the route) and through the relatively narrow valley areas between the Chuckwalla Mountains and Orocopia Mountains; Mecca Hills to the south; and the Eagle, Cottonwood, and San Bernardino Mountains to the north. The Indio Hills lie just north of the westernmost portions of these alternatives. The valley sediments that fill these basins are typically segregated by the surrounding mountains, but are also contiguous with other basins in many cases. General desert surface features are similar throughout the project area.

The Palo Verde Mesa covers approximately 280 square miles and topographically lies about 70 feet above the elevation of the adjacent Palo Verde Valley to the east. The Little Maria Mountains and Big Maria Mountains bound this area on the north, the McCoy and Mule Mountains on the west, and the Palo Verde Mountains to the south. The eastern boundary is the Palo Verde Valley. Drainage in this area flows to the Colorado River, located approximately 10 miles east of the proposed Keim Substation/Switching Station area along the eastern side of the Palo Verde Valley. Drainage from the eastern end of the Arroyo Seco Valley also recharges the Colorado River. The Colorado River is a source of irrigation water for farms in the Palo Verde Valley, and the indirect source of domestic water for urban areas.

Other valleys along the northern alignments have internal drainage, but no perennial streams or permanent natural bodies of water. Standing water may persist for short periods in dry lakes and low areas after heavy rainfall events. The Indio subbasin is drained by the Whitewater River and its tributaries. The Whitewater River rarely flows throughout the year and flow in tributaries, such as San Gorgonio River, is intermittent. Surface flow is southeastward to the Salton Sea. The Colorado River Aqueduct and the Coachella Branch of the All-American Canal convey imported surface water into the Coachella Valley.

3.4.1.2.2 Alternative B

The route for Alternative B passes south from Blythe through the Palo Verde Mesa and southeastern portions of Arroyo Seco Valley and Amos Valley. It turns northwest, near the Algodones Dunes, passing through Amos Valley and into the East Salton Sea Basin. The only surface water features along the route are washes which are generally dry except during and immediately following storm events. These include broad, gallery washes and numerous, narrow channels. Larger washes, such as Wiley Wash, may be many yards wide and filled with sand and cobbles. The smaller channels may be less than a yard wide and a few inches deep, forming a network of shallow rills that flow to larger drainages.

Intermittent flow off the eastern slopes of the Chocolate Mountains ultimately recharges the Colorado River through the Arroyo Seco and Milpitas Washes (DWR 1975). Ephemeral springs occur throughout this area (Department of Defense [DOD] 1995). Several small, isolated, ephemeral water seeps are located near the Algodones Sand Dunes. The western slopes of the Chocolate Mountains drain into the Salton Sea Basin, a natural sink where drainage converges and subsequently evaporates. The Salton Sea has a high level of dissolved salts, due to concentration by evaporation, that are detrimental to most crops. Consequently, most surface water used for irrigation is imported from the Colorado River via the All-American Canal in the Imperial Valley. Two laterals of the All-American Canal (the East Highline Canal and the Coachella Canal) are present in this area (Figure 3.4-2). These canals carry water along the east margin of the Salton Sea to farms with elevations as low as 222 feet below msl. The Coachella Canal is lined with concrete in the project area, whereas the East Highline Canal is an unlined, earthen ditch. Substantial water is lost from unlined portions of these canals due to the coarse and permeable nature of local sediments.

3.4.1.3 Groundwater Basins

A groundwater basin is defined as an area underlain by permeable materials capable of furnishing a significant supply of groundwater to wells or storing a significant amount of water. Figure 3.4-1 depicts a surface expression of groundwater basin boundaries. Basin boundaries are defined by DWR on the basis of the following features:

- Impermeable bedrock;
- Constrictions in permeable materials (a narrow gap in impermeable material generally forms a basin boundary due to groundwater flow constriction in these areas);
- Faults (a fault that crosses permeable materials generally forms a barrier to groundwater movement);
- Low permeability zones (areas of clay or other fine-grained material that have significant areal or vertical extent generally forms a barrier to groundwater movement);

- Groundwater divides (a groundwater divide generally forms a barrier to groundwater movement and have noticeably divergent groundwater flow directions on either side with the water table sloping away from the divide); and
- Adjudicated basin boundaries (basin boundaries established by court orders).

The Proposed Project and Alternatives A and C cross portions of the Palo Verde Mesa, Chuckwalla Valley, Orocopia Valley, and the Coachella Valley Basins (Figure 3.4-1). Alternative B trends south from Blythe through the Palo Verde Mesa, Arroyo Seco Valley, and Amos Valley Basins. It turns northwest in Amos Valley and terminates in the East Salton Sea Basin. Table 3.4-2 presents general information on these basins. Alternative B-1 diverges east of Alternative B into the southern end of the Palo Verde Valley to bypass the Palo Verde Mountains before rejoining the Alternative B alignment.

Basins in the project area are filled with Quaternary alluvial deposits above bedrock. These deposits consist predominantly of sand and gravel, with lesser amounts of silt and clay, which are generally more prevalent toward the center of a basin. Alluvial basins in this area are typically hundreds to thousands of feet thick in the central portions, feathering to zero thickness where surrounding bedrock is exposed. Most sedimentary deposits have high porosities and store substantial volumes of groundwater (Metzger 1973). Deposits near the mountain flanks are generally coarser, more angular, steeper, and less well sorted than deposits near the basin centers.

The availability of hydrogeologic data for basins described below is highly variable and is primarily a function of the number of wells in each area.

3.4.1.3.1 Palo Verde Mesa

The hydrogeology of the Palo Verde Mesa typifies conditions in the northeastern portion of the project area, including the Chuckwalla and Arroyo Seco Valleys. The older alluvium of the Colorado River underlies this area, and is the primary aquifer for the mesa. The older alluvium is more than 600 feet thick, near Blythe (Blythe Energy Project [BEP] 2002), and is composed of sand and small amounts of gravel, silt, and clay. The aquifer receives recharge from the Colorado River underflow from adjacent basins sporadically along the margins by precipitation runoff, and seepage from canals and irrigated lands. Wells completed within the sand and gravel layers that make up most of the older alluvium are highly productive. Depths to groundwater on the mesa range from 70 to 300 feet below the surface (City of Blythe 1989). Groundwater occurs at a depth of about 89 feet below ground surface near the proposed Keim Substation/Switching Station location (BEP 1999).

Since 1964, groundwater levels in the Palo Verde Mesa have declined and partially recovered. Groundwater development for agricultural irrigation on the mesa increased significantly during the 1970s and 1980s. This caused a regional decline in groundwater levels in the mesa. Although farming on the mesa was largely discontinued by the early 1990s, groundwater levels have not fully recovered (BEP 1999).

3.4.1.3.2 Chuckwalla Valley

The 870 square mile Chuckwalla Basin is a broad, alluvial valley bounded by the Chuckwalla, Little Chuckwalla, and Mule Mountains to the south, and on the east by the Mule and McCoy Mountains. Several ranges (Coxcomb, Granite, Palen, and Little Maria) form the northern boundary and extend into the basin, and the intermontane basins are contiguous with the central Chuckwalla Basin. The Eagle Mountains form the eastern boundary.

Subsurface flow into the Chuckwalla Basin derives from the Pinto Valley to the northwest, the Hayfield Basin to the west, and the Cadiz Valley to the north. Underflow from the Chuckwalla Basin into the Palo Verde Mesa to the east was estimated at about 400 acre-feet per year (af/year) (Metzger et al. 1973). Alluvial fill in the Chuckwalla Basin is at least 1,200 feet thick in the central area.

3.4.1.3.3 Orocopia Valley

The Orocopia Valley Basin is a narrow, irregularly shaped basin that connects the Chuckwalla and Coachella Basins between the Eagle, San Bernardino, Chocolate, and Orocopia Mountains. Little well data is available for this basin. This is a relatively high and rugged basin with floor elevations ranging from more than 1,000 to almost 2,000 feet above msl along the northern alignments. Well data was not found for this basin, but groundwater levels are deep (DWR 1980).

3.4.1.3.4 Coachella Valley

The Coachella Valley Basin occupies about 525 square miles northwest of the Salton Sea. Elevations range from 227 feet below msl near the Salton Sea to 2,600 feet above msl near the San Gorgonio pass. Sediment depths exceed 12,000 feet in parts of the basin. The Coachella Valley Basin is divided into several subbasins, of which the Indio subbasin is by far the largest, and is crossed by portions of the Proposed Project and alternatives. The 400-square-mile Indio subbasin is bounded by the Banning fault to the north, and the semi-permeable rocks of the Indio Hills to the northeast. Impermeable rocks of the San Jacinto and Santa Rosa Mountains bound the subbasin on the south. The Salton Sea is the eastern boundary and the basin's primary discharge area.

Primary water-bearing materials in the basin are unconsolidated late Pleistocene and Holocene alluvial deposits. These deposits consist of older alluvium and the Ocotillo Conglomerate Formation, a thick sequence of poorly bedded coarse sand and gravel. The Ocotillo Conglomerate is greater than 1,000 feet thick in many places and is the primary water-bearing unit in the basin (DWR 1964). Groundwater is unconfined in the upper part of the subbasin, and generally confined at lower elevations to the south and southeast groundwater. Depth to groundwater varies widely in the southeast part of the basin and some wells historically had artesian flow (DWR 1964). Aquifer storage ranges from 6 to 15 percent for unconfined parts of the basin (Tyley 1974).

Surface runoff and subsurface inflow are significant sources of recharge to the Coachella Valley Basin. Groundwater is recharged from the Whitewater River northwest of Palm Springs, with a maximum capacity of 300,000 af/year from the Colorado River Aqueduct water (Coachella

Valley Water District [CVWD] 2000a). Colorado River water is conveyed into the subbasin via the Coachella Canal, which also supplies a pilot recharge project facility located in the southeastern part of the basin (CVWD 2000b).

Groundwater pumping prior to 1949 caused water levels to steadily decline. Water levels in the central and southern basin area rose after 1949 and into the early 1980s due to recharge from imported Colorado River water; however, water levels continued to decline elsewhere in the subbasin. Despite Colorado River imports, water levels in the central and southern areas have declined since the 1980s due to increasing urbanization and groundwater pumping (CVWD 2000b).

3.4.1.3.5 East Salton Sea Area

This area includes the west side of the Coachella Valley, the Chocolate Valley, and the East Salton Sea Basin. There is limited groundwater development in the East Salton Sea Basin and no groundwater development in the Chocolate Valley. Consequently, there is limited information on geology, hydrology, and water quality in these basins. The Coachella Valley, by contrast, has extensive groundwater development for municipal and agricultural usage. Thick course-grained deposits provide large yields to water wells in some areas. Groundwater yields in the Coachella Valley are typically higher than in the Imperial Valley due to higher aquifer permeability. Some areas in the Coachella Valley are subject to groundwater overdraft.

Low permeability lake deposits of silt and clay typically alternate with coarser sands and gravels, from periods when the lakes had dried out, from the Salton Sea to the vicinity of Indio (Tetra Tech 2000). This has produced a series of confined aquifers between the lakebed deposits, and unconfined aquifers perched on the uppermost clay layers and recharged primarily by irrigation.

The East Salton Sea Basin has very little natural recharge (about 200 af/year), and has locally poor to unacceptable water quality for domestic or agricultural use. Groundwater extraction in the East Salton Sea Basin in 1952 was about 6 af (DWR 1975).

3.4.1.3.6 Groundwater Quality

The predominant character of groundwater in the Colorado Desert is sodium sulfate or sodium chloride, but calcium and bicarbonate are also present in significant concentrations in some areas. Groundwater information for some basins is limited due to sparse habitation and the absence of well logs and data. Table 3.4-2 provides general information on the areas and production zones of basins within the project area. All of the groundwater basins within the project area have localized problems with poor water quality typically due to sulfate, chloride, fluoride, or high total dissolved solids (TDS). In the Palo Verde Mesa, where all the project alternatives start, localized groundwater quality problems relating to arsenic, selenium, fluoride, chloride, sulfate, and TDS can occur. TDS values are typically higher in mesa groundwater than in water from the adjacent Palo Verde Valley to the east (BEP 1999).

3.4.2 REGULATORY SETTING

Water in the region is regulated under various federal, state, and local laws. The project would not require a long-term sustained water source. This section describes federal, state, and local regulations that may be applicable to the project and related permitting requirements. Several agencies may require permits for crossing of waterways.

3.4.2.1 Federal

The federal CWA contains provisions that protect water quality and prohibit discharge of sediments in waters of the United States. Under the National Pollutant Discharge Elimination System (NPDES) given in Title 40, CFR, Parts 122 through 124, the project would be required to obtain a Construction Stormwater Pollution Prevention Permit and develop a Construction Stormwater Pollution Prevention Plan (SWPPP) prior to initiating construction activities. The U.S. EPA is the federal agency responsible for implementation of the requirements of the NPDES; however, the State of California has been delegated with enforcement responsibilities. The California Water Quality Control Board (CWQCB) issues permits and implements enforcement of the federal law.

Compliance with the CWA would be necessary if the project would result in an alteration of or discharge into a watercourse, water bodies, or wetlands. Watercourses and water bodies are defined as waters of the United States, including lakes, rivers, streams and their tributaries, and wetlands. Waters of the United States in the project area would likely include canals and intermittent drainages that drain into navigable waters such as the Colorado River and Salton Sea.

The project may also be required to comply with two Executive Orders – Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands. Executive Order 11988 requires federal agencies to prepare a floodplain assessment for projects located in or affected by floodplains, and Executive Order 11990 requires federal agencies to minimize any "destruction, loss, or degradation of wetlands."

3.4.2.2 State

State agencies with water resources regulation responsibilities include the California Regional Water Quality Control Board (RWQCB), and the CDFG. The Water Quality Control Plans (Basin Plans) require, under Section 401 of the CWA, that the project will not result in violations of applicable water quality standards.

A permit will be required from the RWQCB for stormwater runoff under the NPDES. This will require preparation of a SWPPP that outlines Best Management Practices (BMPs) to minimize water quality impacts during construction. The permit for stormwater runoff is a General Construction Activity permit. BMPs for construction activities typically include erosion control measures and restoration of disturbed areas.

A Stream Alteration Permit may be required from CDFG, under Fish and Game Code Sections 1601 to 1603, for any changes to the stream, stream channel, or banks. Fish and Game Code 1600 pertains to construction that adversely affects wildlife areas and states that:

> "general plans sufficient to indicate the nature of a project for construction by, or on behalf of, any state or local governmental agency or any public utility shall be submitted to the department if the project will (1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit, (2) use material from the streambeds designated by the department, or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake designated by the department."

The Streambed Alteration Agreement may include conditions that require mitigation of potential impacts to stream habitat. Construction of tower footings in washes will be avoided, if possible, primarily because of the erosion potential at these locations.

3.4.2.3 Local

The Palo Verde Irrigation District maintains a system of canals and drains east of the Proposed Project. The County of Imperial govern water use and groundwater well construction in the southern portion of the project area (i.e., Imperial County). Riverside County governs well construction in the northern portion of the project area (i.e., Riverside County). These water districts, as well as individual county goals, promote and encourage the protection and wise utilization of domestic and agricultural water supplies to ensure the long-term viability and availability of clean and healthful water sources.

3.4.3 ENVIRONMENTAL CONSEQUENCES

3.4.3.1 Methodology and Significance Criteria

Specific locations of transmission towers, material storage yards, temporary storage yards, pull areas, concrete batch plants, and other logistical areas have not been established. Therefore, this assessment addresses potential impacts that may occur and identifies mitigation measures that would serve to reduce such impacts.

The criteria used in analyzing the level of water resource impacts resulting from projects normally involves comparisons of expected project pollutant discharges with relevant federal, state, and local water quality standards. If the federal and state water quality standards are exceeded, it was thereby assumed that a significant adverse impact would occur because of the project. The project will not use or discharge water during the operation of the electrical transmission line so no operational impacts will occur.

The following criteria are used to assess the significance of potential water resources impacts during construction. A significant water resources impact would occur if construction of the project would:

- Result in discharges of contaminants or significant quantities of sediment into waters or watercourses;

- Substantially deplete surface or groundwater resources;
- Substantially alter the normal flow of a water body;
- Substantially alter normal drainage patterns and runoff;
- Disrupt the flow of springs and wells; or
- Result in damage to the facility from flash flood events.

3.4.3.2 Proposed Project Impacts and Mitigation Measures

This section identifies the potentially significant adverse impacts and required mitigation measures for the Proposed Project. In addition, as described in Sections 1 and 2, in response to comments received on the Draft EIS/EIR, a minor variation to the Proposed Project was developed (referred to as Variation PP1). Variation PP1 would remain in the same general alignment as the Proposed Project but would be shifted south approximately 150 feet into SCE's existing and approved DPV2 right-of-way. Therefore, unless noted below, the Water Resources impacts of Variation PP1 would be similar to those identified for the Proposed Project.

Water Resources Impact 1: *Construction activities could result in a discharge of hazardous materials into a watercourse or wash.*

Hazardous materials commonly used during construction operations of transmission lines normally consist of hydrocarbons (e.g., gasoline, diesel, oil, and lubricants), paint, solvents, and other substances. The potential for discharge of these materials into a watercourse or wash is considered a significant impact. Implementation of the following mitigation would reduce this potential impact to less than significant.

Water Resources Impact 1 Mitigation: *A SWPPP would be prepared as required by the State Water Resources Control Board's General Construction Activity Storm Water Permit. The SWPPP shall include:*

(1) An outline of the areas of vegetative soil cover or native vegetation onsite that will remain undisturbed during the construction project.

(2) An outline of all areas of soil disturbance including cut or fill areas which will be stabilized during the rainy season by temporary or permanent erosion control measures, such as seeding, mulch, or blankets, etc.

(3) An outline of the areas of soil disturbance, cut, or fill which will be left exposed during any part of the rainy season, representing areas of potential soil erosion where sediment control BMPs are required to be used during construction.

(4) A proposed schedule for the implementation of erosion control measures.

  (a) The SWPPP shall include a description of the BMPs and control practices to be used for both temporary and permanent erosion control measures.

  (b) The SWPPP shall include a description of the BMPs to reduce wind erosion at all times, with particular attention paid to stockpiled materials.

In addition, the SWPPP would include the following spill prevention and control measures:

(a) Minimize on-site use of hazardous materials and use materials with the lowest toxicity practicably available.

(b) Refuel and maintain of vehicles and equipment only in designated areas that are either bermed or covered with concrete or asphalt to control potential spills.

(c) Conduct refueling only with approved pumps, hoses, and nozzles.

(d) Service and maintenance of vehicles and equipment will be conducted only by authorized personnel.

(e) Place catch-pans under equipment to capture potential spills during servicing.

(f) Place all disconnected hoses in containers to collect residual fuel from the hose.

(g) Shut down vehicle engines during refueling.

(h) No smoking, open flames or welding will be allowed in refueling or service areas.

(i) Perform refueling away from bodies of water to prevent contamination of water in the event of a leak or spill.

(j) When refueling is completed, the service truck will leave the project site.

(k) Provide service trucks with fire extinguishers and spill containment equipment, such as absorbents.

(l) Should a spill contaminate soil, place the soil in containers and dispose of as a hazardous waste.

(m) Inspect all containers used to store hazardous materials at least once per week for signs of leaking or failure. All maintenance and refueling areas will be inspected monthly. Results of inspection will be recorded in a logbook that will be maintained on-site.

Water Resources Impact 2: *Construction activities could result in discharges of sediments into watercourses creating turbidity.*

During construction, vegetation will be removed from the soil surfaces. Additionally, grading, road blading, tower footing excavation, and other construction activities will expose soils. These activities could create an increased potential for erosion and sediment discharge into nearby watercourses or washes, especially during periods of rainfall. This potential impact is considered significant, but would be reduced to less than significant with implementation of the following mitigation.

Water Resources Impact 2 Mitigation: *A SWPPP will be prepared as required by the State Water Resources Control Board's General Construction Activity Storm Water Permit.*

In addition to the measures identified above (i.e., Water Resources Impact 1 Mitigation), the SWPPP would also include the following measures:

(a) Minimize soil disturbances within a watercourse or potential watercourse channels.

(b) If disturbance of a watercourse or potential watercourse is necessary, perform all construction activities when flows in the channel are low or during months when rainfall is minimal.

(c) After construction activities have been completed in an area, appropriately spread or stabilize the exposed or stockpiled soil to prevent entrainment during a discharge event.

(d) Prepare and implement a Reclamation Plan (see Appendix F).

Water Resources Impact 3: *Wells and springs adjacent to construction areas could be disturbed or contaminated.*

Although groundwater throughout most of the project area is too deep to be affected, it is possible that construction (e.g., blasting, heavy machinery, and grading) activities associated with the project could disturb the flow of wells and springs where the depth to water is very shallow. Additionally, the spills of toxic materials could contaminate waters in wells and springs. This potential impact is considered significant, but would be reduced to less than significant with implementation of the following mitigation measures.

Water Resources Impact 3 Mitigation:

(a) Surveys of the route will be conducted prior to construction to identify springs and their well depths, flow conditions, and hydrogeologic relationships within 1,000 feet of construction activities. This survey will also include assessing sensitive endemic species located near these wells and springs. Construction activities will be limited in the following manner: (1) construction activities will not be carried out within 100 feet of a well without using BMPs; (2) blasting will be prohibited within 500 feet of a well; and (3) only size limited blasting will be authorized within 1,000 feet of a well. If damage occurs to a well or spring, the affected area will be repaired by the contractor.

(b) The use or storage of hazardous materials near a well or spring will be prohibited. Additionally, special precautions will be implemented to prevent spills of hazardous materials, discharges of foreign materials, and sedimentation discharges near a well or spring.

(c) Dewatering activities for tower footings or other deep excavations will be planned to minimize the effect on wells and springs.

Water Resources Impact 4: *Tower locations may include areas subject to flood events that could result in damage and risk of failure of project facilities.*

The transmission line could be constructed in areas prone to flash flood events. Flash floods cannot be predicted accurately, and they can severely damage tower footings and result in tower failure. The Proposed Project alignment would cross multiple dry washes, but no canals or perennial water bodies. This potential impact is considered significant, due to potential flash flooding in washes throughout the project area, but would be reduced to less than significant with implementation of the following mitigation measures.

Water Resources Impact 4 Mitigation:

(a) The placement of a tower in an alluvial fan where it emerges at a canyon mouth and at the front of a mountain should be avoided. Locating structures near watercourses or washes with sizable catchments in nearby mountains which are generally prone to flash floods should be avoided. Historical review and interviews with knowledgeable individuals or groups about past flash flooding events in the area should be undertaken.

(b) If placement of a tower in an area described in a, above, cannot be avoided, a geotechnical engineer should be consulted regarding the design of the tower at risk locations.

Water Resources Impact 5: *Use of water during construction could deplete available resources.*

Approximately 440,000 to 490,000 gallons (1.35 to 1.5 af) of water would be needed to mix concrete for transmission tower footings. Other water uses at the site such as dust control and potable water for drinking may be necessary. Water could be obtained from a variety of currently available sources. The major water purveyors along the alignment of the Proposed Project include the IID, Coachella Valley Water District, Palo Verde Irrigation District, and cities of Blythe, Indio, Palm Springs, and Coachella. Impacts to water supplies would not be significant because: 1) water would be obtained from more than one existing source, 2) impacts would be short term (primarily during foundation installation), and 3) limited water would be used for suppression of fugitive dust on access roads (a road sealant emulsion would be used primarily for dust suppression on access roads).

3.4.3.3 Alternative A Impacts and Mitigation Measures

Water resources impacts associated with Alternative A are similar to those identified above for the Proposed Project, and mitigation measures identified for the Proposed Project would also be appropriate for Alternative A impacts. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level. Potential differences in the impacts are discussed below.

Alternative A would require approximately 440,000 to 490,000 gallons (1.35 to 1.5 acre-feet) of water for mixing tower footing concrete. Water could be obtained from a variety of currently available sources. The major water purveyors along the alignment of Alternative A are the same as for the Proposed Project (IID, CVWD, Palo Verde Irrigation District, and the cities of Blythe, Indio, and Coachella). Alternative A would require about the same amount of water as the Proposed Project; therefore, impacts to water supplies would not be significant for the same reasons as described for the Proposed Project.

3.4.3.4 Alternative B Impacts and Mitigation Measures

Water resources impacts associated with Alternative B would be similar to those identified above for the Proposed Project. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level. Potential differences in the impacts are discussed below.

Alternative B would cross the East Highland and Coachella Canals. These canals are less than 250 feet wide, and would be spanned by the transmission line.

Alternative B would require approximately 1,100,000 to 1,500,000 gallons (3.37 to 4.6 af) of water for mixing tower footing concrete. Water could be obtained from a variety of currently available sources. The major water purveyors along the alignment of Alternative B include the IID, CVWD Water Agency, Palo Verde Irrigation District, and City of Blythe. Impacts to water supplies would not be significant for the same reasons as described for the Proposed Project.

Segment alignment Option B-1 is about 16.5 miles long and would require about 94 towers before rejoining the main Alternative B alignment. The alignment option would add approximately 3 miles in total length to the Alternative B transmission line, requiring approximately 15 to 20 additional tower structures and 0.5 additional af of water for foundation concrete.

Because Alternative B-1 runs up a large sandy wash after it diverges from Alternative B, it has an increased potential for erosion. Additionally, the Alternative B-1 alignment option would be partially located within the Colorado River floodplain. However, potential erosion associated with Colorado River flood flows within the floodplain have been significantly reduced by impoundment facilities along the Colorado River.

3.4.3.5 Alternative C Impacts and Mitigation Measures

Water resources impacts associated with Alternative C are similar to those identified above for the Proposed Project, and mitigation measures identified for the Proposed Project would also be appropriate for Alternative C impacts. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level. Potential differences in the impacts are discussed below.

Alternative C would require approximately 440,000 to 490,000 gallons (1.35 to 1.5 af) of water for mixing tower footing concrete. Water could be obtained from a variety of currently available sources. The major water purveyors along the alignment of Alternative C are the same as for the Proposed Project (IID, Coachella Valley Water District, Palo Verde Irrigation District, and the cities of Blythe, Indio, and Coachella). Alternative C would require about the same amount of water as the Proposed Project; therefore, impacts to water supplies would not be significant for the same reasons as described for the Proposed Project.

3.4.3.6 No Project Alternative

Under the No Project Alternative, no facilities would be constructed and no water resources related impacts would occur.