2.4 Hydrology and Water Quality

This section of the Environmental Impact Report (EIR) discusses potential impacts to hydrology, water quality, and groundwater resources resulting from the implementation of the project. The analysis is based on the review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as the following technical studies prepared for the project in accordance with the *County of San Diego Guidelines for Determining Significance: Hydrology and Water Quality* (County of San Diego 2021a) and *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources* (County of San Diego 2023):

- Starlight Solar preliminary grading plans (Michael Baker International 2024a; Appendix B.2 of this EIR)
- *Preliminary Drainage Study, Starlight Solar* (Michael Baker International 2024b; Appendix G.1 of this EIR)
- *Groundwater Monitoring and Mitigation Plan for the Starlight Solar Project* (INTERA Incorporated [INTERA] 2025c; Appendix G.2 of this EIR)
- County of San Diego Stormwater Quality Management Plan (SWQMP) For Standard Projects (Standard SWQMP), prepared for the Starlight Solar Project, March 15, 2024 (Appendix G.3 of this EIR)
- *Revised Construction Water, Operations and Maintenance and Decommissioning Water Demand Estimate – Starlight Solar* (INTERA 2025a; Appendix G.4 of this EIR)
- *Updated Draft Groundwater Resources Investigation Report – Flat Creek Watershed Analysis* (INTERA 2025b; Appendix G.5 of this EIR)

Comments received in response to the Notice of Preparation (NOP) include concerns regarding potable water use by the project during construction and operation, adverse effects of pumping and other activities on off-site wells, potentially increased stormwater runoff and pollutant discharge, and impacts to local bodies of water. These concerns are addressed in this section of the EIR where applicable and within the preliminary drainage study (see Appendix G.1) and the Ground Water Investigation Report (see Appendix G.5). Copies of the NOP and comment letters received in response to the NOP are included in Appendix A, NOP, Initial Study, and Public Comments, of this EIR.

2.4.1 Existing Conditions

2.4.1.1 Regional Climate

The regional climate of the project site consists of warm summer months and cool winters. Average temperatures vary greatly within the region. Mean maximum temperatures in the summer months reach the high 80s to low 90s degrees Fahrenheit (°F). Temperatures may fall below freezing in the winter months, with snow levels occasionally below 2,500 feet (Western Regional Climate Center 2019). Monthly precipitation records were obtained from the County of San Diego (County) for a rain gauge previously located in Jacumba at 32.515557°N, 116.183333°W, and an elevation of 2,800 feet. The period of record available is from March 1963 until March 2011.

2.4.1.2 Regional Hydrology and Drainage

The project site is within the Carrizo Creek watershed (Hydrologic Unit Code [HUC] 8: 18100202) (U.S. Geological Survey 2023). The project site is located within the Jacumba Valley Hydrologic Subarea

(722.72) of the Jacumba Hydrologic Area (722.70), all within the Anza Borrego Hydrologic Unit (722.00) of the Colorado River Basin (Regional Water Quality Control Board [RWQCB] 1986) (Figure 2.4-1). The contributing watershed to the project site covers an approximately 119-square-mile area with a significant portion of the watershed in the state of Baja California, Mexico (Swenson 1981). The project site is located within the Boundary Creek subwatershed and the Walker Canyon–Carrizo Creek subwatershed (Figure 2.4-2).

The project site topography is lowest in the center of the project site along a drainage course at approximately 3,450 feet above mean sea level (amsl). The elevation of the site north of Jewel Valley Road ranges from 3,450 to 3,600 feet amsl with drainage toward the south (near the drainage course) and to the northwest for the remainder of the site. The elevation of the site south of Jewel Valley Road ranges from 3,450 to 3,650 feet amsl with drainage to the north/northwest (Michael Baker International 2024; see Appendix G.1). Throughout the project site, there are various dirt roads and scattered culverts sized for low-flow conditions. The existing culverts are not designed to convey the 100-year peak flow without overtopping; rather, they allow for dry-weather crossing during moderate storms. In large storms, runoff overtops the respective dirt road in all cases.

The region is relatively arid, and surface waters are dominated by ephemeral drainages that convey runoff during and/or shortly after rain events. The project site contains two historic drainages: Boundary Creek just south of Jewel Valley Road and an unnamed tributary of Boundary Creek in the southernmost portion of the project. Jewel Valley Road parallels what was likely once a well-defined Boundary Creek as evidenced by imagery from 1953 (SWCA Environmental Consultants 2022). No National Wetlands Inventory–mapped features are mapped within the survey area north of Jewel Valley Road, although there are some ephemeral intermittent features. Boundary Creek conveys flow in a southeasterly direction toward the community of Jacumba, California, near the U.S.–Mexico border. Near Jacumba, Boundary Creek changes trajectory and conveys flow in a northerly direction toward Carrizo Creek. Flow direction varies within the project site; however, flow within the broader watershed is generally conveyed in a northeasterly direction toward the Salton Sea.

2.4.1.3 Surface Water Quality

The beneficial uses of the surface water bodies in the project area have been designated by the Colorado River Basin RWQCB in the *Water Quality Control Plan for the Colorado River Basin Region* (Basin Plan) (RWQCB 2019). The Basin Plan also includes water quality objectives that are protective of the identified beneficial uses; the beneficial uses and water quality objectives collectively make up the water quality standards for the region.

Under the Clean Water Act (CWA) Section 303(d), the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. No water bodies within the project vicinity are listed on the CWA 303(d) List (impaired water bodies) (State Water Resources Control Board [SWRCB] 2021), although surface waters would eventually discharge indirectly to the Salton Sea, which has several identified impairments. CWA Section 303(d) impairments associated with the Salton Sea include arsenic, selenium, nutrients, salinity, chlorpyrifos, DDT, and enterococcus; these are impairments typically associated with agricultural activities, ranching, and/or surface mining (SWRCB 2016). A total maximum daily load (TMDL) defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. No TMDLs have been established for the aforementioned pollutants/stressors (SWRCB 2016). The project is not in a watershed with a high receiving water risk, as defined in the Construction General Permit (CGP) Guidance (SWRCB 2018). High-risk watersheds are mapped HUC Level 12 watersheds that drain to water bodies that are:

1. CWA 303(d)–listed as being impaired for sediment/siltation;

2. Have a U.S. Environmental Protection Agency (EPA)–approved, sediment-related TMDL; or
3. Have the existing beneficial uses of fish spawning, fish migration, and cold freshwater habitat according to the Basin Plan (RWQCB 2019).

2.4.1.4 Groundwater Resources

The project is proposing to use nonpotable groundwater imported from the Jacumba Community Services District's (JCSD's) Highland Center Well with a potential backup supply provided by the Park Well. JCSD is approximately 5 miles east of the project site. The JCSD service area consists of approximately 423 acres south of Interstate 8, immediately north of the U.S.–Mexico Border, and within the town of Jacumba Hot Springs.

The imported water is sourced from groundwater storage in the Quaternary alluvium, referred to as the Jacumba Valley alluvial aquifer. The Flat Creek watershed consists of approximately 52,405 acres, with 1,058 acres (2%) of the watershed located in the United States. The Flat Creek watershed ranges from 4,265 feet amsl at its headwaters along the Sierra Juarez Mountains to 2,777 feet amsl northeast of the Highland Center Well. Current groundwater demand from the Jacumba Valley alluvial aquifer includes extraction by JCSD, Jacumba Valley Ranch Water Company, and a few potential domestic well owners. Since 1985, JCSD has extracted potable water from up to four groundwater wells within its approximately 423-acre boundary (San Diego Local Agency Formation Commission 2013). In 2023, the Jacumba Valley Groundwater Basin was estimated to have 8,639 acre-feet (af) in storage. Based on the current pumping capacity of the Highland Center and Park Wells, the maximum nonpotable annual production from JCSD wells screened in the Jacumba Valley alluvial aquifer is 410 acre-feet per year (af/yr). This estimate is based on continuous pumping for 1 year at a maximum flow rate of 174 gallons per minute (gpm) and 80 gpm from the Highland Center Well and Park Well, respectively (INTERA 2025b; see Appendix G.5).

Regionally, the project site is not underlain by a California Department of Water Resources (DWR)–defined groundwater basin. The project is located between the Jacumba Valley Groundwater Basin (DWR Basin No. 7-47), approximately 4.5 miles east and the Campo Valley Groundwater Basin (DWR Basin No. 9-028), approximately 9 miles west (RWQCB 2022). JCSD and the source of water for the project are within the Jacumba Valley Groundwater Basin. This basin has a surface area of 6,400 acres and is bounded by faults on the east and west and by the international border with Mexico on the south. Average annual rainfall within the area ranges from about 14 to 16 inches. It is recharged from the Boundary Creek drainage and the Flat Creek drainage (DWR 2004).

As described below in Section 2.4.2, Regulatory Setting, the Sustainable Groundwater Management Act (SGMA) requires basins identified as medium and high priority to be sustainably managed by local public agencies (e.g., counties, cities, and water agencies), who become groundwater sustainability agencies (GSAs). The primary purpose of the GSAs is to develop and implement a groundwater sustainability plan (GSP) to achieve long-term groundwater sustainability. However, the Jacumba Valley Groundwater Basin and the Campo Valley Groundwater Basin are both categorized as very low priority; GSAs are not required to prepare a GSP for basins categorized as low or very low priority (California Water Code Section 10727).

2.4.1.5 Groundwater Quality

The JCSD supplies nonpotable water from the Highland Center Well and the Park Well and supplies potable water from JCSD Wells 7 and 8, which source water from a fractured rock aquifer west of the Jacumba Valley Groundwater Basin.

Water quality samples collected from the Highland Center Well in 2016 and 2023 had measured total dissolved solids concentrations of 400 and 450 milligrams per liter, respectively. A wide range of

constituents, including general minerals, inorganic minerals, and volatile organic compounds, were analyzed. Laboratory results indicated that no volatile organic compounds were detected and that groundwater produced from the Highland Center Well is suitable for construction water supply (see Appendix G.5).

The Park Well was initially intended for use as a potable water well; however, low concentrations of volatile organic compounds were detected during drilling. Toluene was detected at concentrations of 291 micrograms per liter (µg/L), 199 µg/L, and 520 µg/L in water quality samples collected from the Park Well in 2006 (see Appendix G.5). A subsequent water quality sample was collected from the Park Well on November 5, 2015. Results from this sample indicated no detections above the reporting limits for all constituents analyzed, including toluene, which was previously detected in the Park Well above the drinking water maximum contaminant level (MCL) of 150 µg/L (see Appendix G.5).

2.4.1.6 Flood Hazard Zones

The Federal Emergency Management Agency (FEMA) has not mapped a special flood hazard area for any portion of the project site. The project site is located on Flood Insurance Rate Map (FIRM) 06073C2075F and is designated as Zone D (undetermined flood hazard), as no analysis of flood hazards has been conducted (FEMA 2024). Although the site does not have a determined flood level, multiple drainages traverse the site.

2.4.2 Regulatory Setting

2.4.2.1 Federal Regulations

Federal Clean Water Act

The CWA (33 United States Code 1251 et seq.), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the nation's waters." Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level, this includes the EPA, U.S. Army Corps of Engineers (USACE), U.S. Bureau of Reclamation, and major federal land management agencies, such as the U.S. Forest Service and Bureau of Land Management. At the state level, with the exception of tribal lands, the California Environmental Protection Agency and its subagencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the CWA. The California Legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality to the SWRCB and its nine RWQCBs. The SWRCB provides state-level coordination of the water quality control program by establishing statewide policies and plans for the implementation of state and federal regulations. The nine RWQCBs throughout California adopt and implement water quality control plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The RWQCB adopts and implements a basin plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code, Sections 13240–13247). The project site is within the jurisdiction of the Colorado River Basin Region RWQCB.

Important sections of the CWA are as follows:

- **CWA Sections 303 and 304** provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to present the EPA with a list of impaired water bodies that do not meet water quality standards and objectives. California is

required to establish TMDLs for each pollutant/stressor. An essential component of a TMDL is the calculation of the maximum amount of a pollutant that a water body can receive while still meeting water quality standards. Based on the TMDL, the state allocates a loading capacity among the various point and non-point sources that discharge into the impaired water body. Permits for point sources are issued through the EPA's National Pollutant Discharge Elimination System (NPDES) program, as discussed below.

The Colorado River Basin RWQCB is responsible for the protection of the beneficial uses of waters in eastern San Diego County and therefore within the project vicinity. The RWQCB uses its planning, permitting, and enforcement authority to meet its responsibilities adopted in the Basin Plan (RWQCB 2019) to implement plans, policies, and provisions for water quality management.

In accordance with state policy for water quality control, the RWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The Basin Plan identifies existing and potential beneficial uses supported by the key surface water drainages throughout the Colorado River Basin Region RWQCB jurisdiction. Existing uses of groundwater in the vicinity of the project site, which includes the Anza Borrego Hydrologic Unit, consist of municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); Groundwater Recharge (GWR); Water Contact Recreation (REC-1); Non-Water Contact Recreation (REC-2); Warm Freshwater Habitat (WARM); Wildlife Habitat (WILD); and Rare, Threatened, or Endangered Species (RARE) (RWQCB 2019). The Basin Plan also includes water quality objectives that are protective of the identified beneficial uses; the beneficial uses and water quality objectives collectively make up the water quality standards for the region.

- **CWA Section 401 (Water Quality Certification)** requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the act. The project site does contain aquatic resources which are anticipated to meet the criteria of waters of the state regulated under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and/or Section 401 of the CWA.
- **CWA Section 402** establishes the NPDES program, a permitting system for the discharge of pollutants through a point source into waters of the United States. Such discharge is prohibited unless it is in compliance with an NPDES permit. The NPDES program regulates the discharge of pollutants from municipal and industrial wastewater treatment plants and sewer collection systems, as well as stormwater discharges from industrial facilities, municipalities, and construction sites. In California, implementation and enforcement of the NPDES program is conducted through the SWRCB and nine RWQCBs. The RWQCBs set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs. The proposed project would be subject to NPDES permits as described under the state regulatory framework, below.
- **CWA Section 404** establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the USACE and EPA.

Federal Emergency Management Agency

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. FEMA manages the NFIP and creates FIRMs that designate 100-year floodplain zones and delineate other flood hazard areas. A FEMA 100-year flood hazard zone is an area that has a 1-in-100 (1%) chance of being flooded in any year based on historical data. The FIRMs indicate the regulatory floodplain to assist communities with land use and floodplain management decisions, so that the requirements of the NFIP are

met in the event of damaging floods. The FIRMs guide location of housing development, the amount of grading/regulation necessary for housing placed on a floodplain, and a city's Uniform Building Code.

2.4.2.2 State Regulations

California Department of Water Resources

The DWR is the state agency that studies, constructs, and operates regional-scale flood protection systems, in partnership with federal and local agencies. The DWR also provides technical, financial, and emergency response assistances to local agencies related to flooding.

Several bills were signed by Governor Schwarzenegger in 2007, adding to and amending state flood and land use management laws. The laws contain requirements and considerations that outline a comprehensive approach to improving flood management at state and local levels.

FloodSAFE California is a strategic multifaceted program initiated by DWR in 2006. FloodSAFE is guiding the development of regional flood management plans, which encourage regional cooperation in identifying and addressing flood hazards. Regional flood plans include flood hazard identification, risk analyses, review of existing measures, and identification of potential projects and funding strategies. The plans emphasize multiple objectives, system resiliency, and compatibility with state goals and integrated regional water management plans. DWR has the lead role in implementing FloodSAFE and works closely with federal, state, tribal, and local partners to improve integrated flood management systems statewide. DWR's role is to advise and provide assistance as a resource to local jurisdictions as they pursue compliance.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act (Division 7 of the California Water Code) is the primary water quality control law for California, regulating the quality of the waters of the state. The SWRCB is given authority to enforce the Porter-Cologne Act as well as Section 401 of the CWA and has adopted a statewide general permit that applies to almost all stormwater discharges. This general permit, which is implemented and enforced by the Colorado River Basin RWQCB and San Diego RWQCB in San Diego, requires all owners of land where construction activity occurs to

- Eliminate or reduce non-stormwater discharges to stormwater systems and other waters of the United States;
- Develop and implement a stormwater pollution control plan emphasizing stormwater best management practices (BMPs); and
- Perform inspections of stormwater pollution prevention measures to assess their effectiveness.

In addition, SWRCB regulations mandate a "non-degradation policy" for state waters, especially those of high quality. The RWQCB establishes requirements prescribing the quality of point sources of discharge and establishes water quality objectives. These objectives are established based on the designated beneficial uses for a particular surface water or groundwater.

In accordance with the California Water Code, the Colorado River Basin RWQCB developed the Basin Plan (RWQCB 2019), designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Water quality objectives for the Colorado River Basin satisfy state and federal requirements established to protect waters for beneficial uses and are consistent with existing statewide plans and policies.

The Colorado River Basin RWQCB has permitting authority over the project site. Construction in California that disturbs 1 or more acres of land surface is required to comply with the NPDES CGP for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (as amended by Order No. 2010-0014- DWQ and 2012-006-DWQ) (CGP). As the Colorado River Basin RWQCB has not adopted a municipal permit for the project site, the project will be subject to the postconstruction standards in the CGP, as well as the County's Jurisdictional Runoff Management Program (County of San Diego 2019).

In either case, dischargers are required to submit a Notice of Intent (NOI) in order to obtain coverage under the CGP, at the discretion of the SWRCB and the applicable RWQCB. Dischargers are responsible for notifying the relevant RWQCB of violations or incidents of noncompliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected.

The CGP requires a risk-based permitting approach, dependent upon the likely level of risk imparted by a project. To ensure compliance and protection of water quality, the permit implements monitoring, reporting, and training requirements for management of potential stormwater pollutants. The permit contains several compliance items, including

1. Mandatory BMPs to reduce erosion and sedimentation, which may include incorporation of vegetated swales, setbacks and buffers, rooftop and impervious surface disconnection, bioretention cells, rain gardens, rain cisterns, implementation of pollution/sediment/spill control plans, training, and other structural and nonstructural actions;
2. Sampling and monitoring for non-visible pollutants;
3. Effluent monitoring and annual compliance reports;
4. Development and adherence to a Rain Event Action Plan;
5. Requirements for the postconstruction period;
6. Numeric action levels and effluent limits for pH and turbidity;
7. Monitoring of soil characteristics on-site; and
8. Mandatory training under a specific curriculum.

The proposed project would disturb more than 1.0 acre of soil and would thus be subject to the provisions and requirements of the CGP. The applicant would submit an NOI to the SWRCB and obtain coverage under, and comply with, the CGP. The preparation of a stormwater pollution prevention plan (SWPPP) would be required in accordance with the CGP. The SWPPP would include, but not be limited to, relevant measures, conditions, and obligations which would reduce or eliminate the impacts of construction activities on stormwater and receiving water quality and quantity. The CGP also contains requirements for the postconstruction period. The proposed project will need to obtain approval for their postconstruction plans from both the County and the Colorado River Basin RWQCB.

Sustainable Groundwater Management Act

The SGMA is a package of three bills (Assembly Bill [AB] 1739, Senate Bill [SB] 1168, and SB 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The SGMA establishes standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, and priorities and timelines to achieve sustainable groundwater management. Central to the SGMA are the identification of critically overdrafted basins and the prioritization of groundwater basins, establishment of GSAs, and preparation and implementation of GSPs for medium-priority, high-priority, and critically overdrafted basins. GSP objectives require that

future groundwater use does not cause undesirable results, which include the following: declining water levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water. One requirement of a GSP is to establish a monitoring network to track water level changes, groundwater storage, and monitor predetermined water level thresholds within each basin. Water level data for these basins will be available to the public through online portals. A basin may be managed by a single GSP or multiple coordinated GSPs.

At the state level, DWR has the primary role in the implementation, administration, and oversight of the SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner.

In San Diego County, three groundwater basins are designated as medium or high priority and subject to SGMA: Borrego Valley (Borrego Springs Subbasin), San Luis Rey Valley (Upper San Luis Rey Valley Subbasin), and San Pasqual Valley (County of San Diego 2022). As discussed in Section 2.4.1, Existing Conditions, the proposed project is within the region of the Jacumba Valley Groundwater Basin, a very low-priority groundwater basin, and thus does not require a GSP.

Urban Water Management Planning Act

As a part of the California Water Code, the California Urban Water Management Planning Act requires all urban water suppliers with more than 3,000 connections or distributing more than 3,000 af/yr to complete an urban water management plan (UWMP) every 5 years, in years ending in "5" and "0". Each plan must include a description of the service area, existing and planned sources of water available to the supplier, how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan. In addition, every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its UWMP that includes, but is not limited to, an analysis of water supply reliability over a 20-year planning timeframe, the procedures used in conducting an annual water supply and demand assessment, a definition of standard water shortage levels corresponding to progressive ranges of up to 50% shortages and greater than 50% shortages, and shortage response actions that align with the defined shortage levels.

The JCSD pumps local groundwater from four district-owned wells to 230 connections. The system includes two treated-water reservoirs with an aggregate capacity of 638,000 gallons (San Diego Local Agency Formation Commission 2013). As the JCSD serves less than 3,000 connections, it is not required to prepare an UWMP.

2.4.2.3 Local Regulations

County of San Diego General Plan

The 2011 *San Diego County General Plan: A Plan for Growth, Conservation, and Sustainability* (General Plan) (County of San Diego 2011a) guides future growth in the unincorporated areas of San Diego County and considers projected growth anticipated to occur within various communities. Goals and policies from several General Plan elements were determined to be applicable to the proposed project; these are discussed below.

Land Use Element

The Land Use Element provides a framework to accommodate future development in an efficient and sustainable manner that is compatible with the character of unincorporated communities and the protection

of valuable and sensitive natural resources (County of San Diego 2011b). Currently, the County is faced with both significant growth pressures and severe environmental constraints. While population continues to grow, the supply of land capable of supporting development continues to decrease. In accommodating this growth, the land use plan encourages the provision of diverse housing choices while protecting the established character of existing urban and rural neighborhoods. The Land Use Element provides a description of all land use designations applicable to land within San Diego County and specifies the permitted uses on those land use designations.

The following policies in the Land Use Element (County of San Diego 2011b) are applicable to the project:

- **Policy LU-6.5: Sustainable Stormwater Management.** Ensure that development minimizes the use of impervious surfaces and incorporates other Low Impact Development techniques as well as a combination of site design, source control, and stormwater best management practices, where applicable and consistent with the County's LID [Low Impact Development] Handbook.
- **Policy LU-6.9: Development Conformance with Topography.** Require development to conform to the natural topography to limit grading, incorporate and not significantly alter the dominant physical characteristics of a site, and to utilize natural drainage and topography in conveying stormwater to the maximum extent practicable.
- **Policy LU-6.12 Flooding.** Document and annually review areas within floodways and 100- and200-year floodplains to ensure areas subject to flooding are accurately mapped in accordance with AB 162 (enacted January 1, 2008).
- **Policy LU-8.2: Groundwater Resources.** Require development to identify adequate groundwater resources in groundwater dependent areas, as follows.
    - In areas dependent on currently identified groundwater over-drafted basins, prohibit new development from exacerbating overdraft conditions. Encourage programs to alleviate overdraft conditions in Borrego Valley.
    - In areas without current overdraft groundwater conditions, evaluate new groundwater dependent development to assure a sustainable long-term supply of groundwater is available that will not adversely impact existing groundwater users.
- **Policy LU-12.1 Concurrency of Infrastructure and Services with Development.** Require the provision of infrastructure, facilities, and services needed by new development prior to that development, either directly or through fees. Where appropriate, the construction of infrastructure and facilities may be phased to coincide with project phasing.
- **Policy LU-12.2 Maintenance of Adequate Services.** Require development to mitigate significant impacts to existing service levels of public facilities or services for existing residents and businesses. Provide improvements for Mobility Element roads in accordance with the Mobility Element Network Appendix matrices, which may result in ultimate build-out conditions that achieve an improved LOS [level of service] but do not achieve a LOS of D or better.
- **Policy LU-13.2: Commitment of Water Supply**. Require new development to identify adequate water resources, in accordance with State law, to support the development prior to approval.

Conservation and Open Space Element

The primary focus of the Conservation and Open Space Element is to provide direction to future growth and development in San Diego County with respect to conservation, management, and utilization of natural and cultural resources, protection and preservation of open space, and provision of park and recreation resources (County of San Diego 2011c).

The following policies of the Conservation and Open Space Element (County of San Diego 2011c) are applicable to the project:

- **Policy COS-4.1: Water Conservation.** Require development to reduce the waste of potable water through use of efficient technologies and conservation efforts that minimize the County's dependence on imported water and conserve groundwater resources.
- **Policy COS-4.2: Drought-Efficient Landscaping.** Require efficient irrigation systems and in new development encourage the use of native plant species and non-invasive drought tolerant/low water use plants in landscaping.
- **Policy COS-4.3 Stormwater Filtration**. Maximize stormwater filtration and/or infiltration in areas that are not subject to high groundwater by maximizing the natural drainage patterns and the retention of natural vegetation and other pervious surfaces. This policy shall not apply in areas with high groundwater, where raising the water table could cause septic system failures, moisture damage to building slabs, and/or other problems.
- **Policy COS-4.4 Groundwater Contamination.** Require land uses with a high potential to contaminate groundwater to take appropriate measures to protect water supply sources.
- **Policy COS-5.2: Impervious Surfaces.** Require development to minimize the use of directly connected impervious surfaces and to retain stormwater runoff caused from the development footprint at or near the site of generation.
- **Policy COS-5.3: Downslope Protection.** Require development to be appropriately sited and to incorporate measures to retain natural flow regimes, thereby protecting downslope areas from erosion, capturing runoff to adequately allow for filtration and/or infiltration, and protecting downstream biological resources.
- **Policy COS-5.5: Impacts of Development to Water Quality.** Require development projects to avoid impacts to the water quality in local reservoirs, groundwater resources, and recharge areas, watersheds, and other local water sources.
- **Policy COS-19.1 Sustainable Development Practices.** Require land development, building design, landscaping, and operational practices that minimize water consumption.

Safety Element

The purpose of the Safety Element is to provide safety considerations that will help minimize the risk of personal injury, loss of life, property damage, and environmental damage associated with natural and human-made hazards within San Diego County (County of San Diego 2021b).

The following policies of the Safety Element (County of San Diego 2021b) are applicable to the project:

- **Policy S-10.3 Development in Floodplains.** Limit development in designated floodplains to decrease the potential for property damage and loss of life from flooding and to avoid the need for engineered channels, channel improvements, and other flood control facilities. Require development to conform to federal floodproofing standards and siting criteria to prevent flow obstruction.
- **Policy S-10.4 Development in Flood Hazard Areas.** Require development within mapped flood hazard areas to be sited and designed to minimize on and off-site hazards to health, safety, and property due to flooding.
- **Policy S-11.4 Stormwater Management.** Require development to incorporate low impact design, including site design, source control, and other measures to minimize stormwater impacts on

drainage and flood control facilities and promote groundwater recharge, where feasible. In addition, require projects that are classified as Priority Development Projects to also incorporate pollutant control and hydromodification management measures.

- **Policy S-11.5 Development Site Improvements.** Require development to provide necessary on- and off-site improvements to stormwater runoff and drainage facilities.
- **Policy S-11.6 Stormwater Hydrology.** Ensure development avoids diverting drainages, increasing velocities, and altering flow rates to off-site areas to minimize adverse impacts to the area's existing hydrology.

Environmental Justice Element

The Environmental Justice Element includes requirements related to incorporating environmental justice into local land use planning processes. SB1000 requires local governments to address pollution and other hazards that disproportionately impact low-income communities and communities of color within their jurisdiction.

The following policy from the Environmental Justice Element (County of San Diego 2024a) is applicable to the proposed project:

- **EJ-4.3 Green Infrastructure Standards (all unincorporated areas)**. Develop green infrastructure standards that rely on natural processes for stormwater drainage, groundwater recharge, and flood management. Explore feasibility of expanding green infrastructure projects on public, underutilized land.

Mobility Element

The Mobility Element provides a framework for a balanced, multimodal transportation system for the movement of people and goods within the unincorporated areas of the County. The Mobility Element identifies the county road network so that rights-of-way can be preserved for future motorized and non-motorized roadway purposes (County of San Diego 2011d).

The following policies from the Mobility Element (County of San Diego 2011d) are applicable to the proposed project:

- **Policy M-2.5 Minimize Excess Water Runoff.** Require road improvements to be designed and constructed to accommodate stormwater in a manner that minimizes demands upon engineered stormwater systems and to maximize the use of natural detention and infiltration techniques to mitigate environmental impacts.
- **Policy M-10.7 Parking Area Design for Stormwater Runoff.** Require that parking areas be designed to reduce pollutant discharge and stormwater runoff through site design techniques such as permeable paving, landscaped infiltration areas, and unpaved but reinforced overflow parking areas that increase infiltration. Require parking areas located within or adjacent to preserve areas to also include native landscaping and shielded lighting.

Boulevard Subregional Plan

The project site lies within the subregional planning area of Boulevard, within the Mountain Empire Subregion. The Boulevard Subregional Planning Area includes approximately 55,350 acres and contains the communities of Boulevard, Manzanita, Live Oak Springs, Tierra Del Sol, Crestwood, Jewel Valley, McCain Valley, Miller Valley, and a portion of Bankhead Springs (County of San Diego 2013).

The following policies of the *Boulevard Subregional Planning Area, Mountain Empire Subregional Plan* (Boulevard Subregional Plan) (County of San Diego 2013) are applicable to the proposed project:

- **Goal CM 8.1** Preservation of the quality and quantity of ground and surface water resources to serve the Boulevard community.
    - **Policy CM 8.1.1** Prohibit development and the exportation or sale of groundwater that would adversely impact the ground and surface water resources.
    - **Policy CM 8.1.2** Coordinate with LAFCO [Local Agency Formation Commission] to oppose the development of new water districts and annexation to existing water districts to avoid growth inducement and overdraft conditions.
- **Goal CM 8.2** Prevention of like or similar projects that have closely spaced septic systems feeding and infiltrating the same aquifer that is used for withdrawal of drinking water.
    - **Policy CM 8.2.1** Require that any new proposed development require sufficient set back from each other to avoid the potential to contaminate and/or overload the aquifer with pollutants.
- **Goal CM 8.3** Protection of existing groundwater resources from intrusion of potentially contaminated imported water.

San Diego Municipal Separate Storm Sewer System Permit

Per federal regulations, the State of California issues a municipal stormwater permit (also known as a NPDES permit) to municipalities that must be renewed every 5 years. Under this permit, each municipality must develop a stormwater management program designed to control the discharge of pollutants into and from the municipal separate storm sewer systems (MS4) (or from being discharged directly into the MS4). The purpose is to protect local water bodies since storm drains typically discharge their water into streams, bays, and/or the ocean without treatment. Order R9-2013-0001 was adopted by the San Diego RWQCB on May 8, 2013, and established waste discharge requirements (WDRs) for discharge of urban runoff from the County MS4, the 18 incorporated cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority. Order R9-2015-0001 was adopted on February 11, 2015, amending the regional MS4 permit to extend coverage to the Orange County co-permittees. Order R9-2015-0100 was adopted on November 18, 2015, amending the regional MS4 permit to extend coverage to the Riverside County co-permittees (County of San Diego 2024b).

The regional MS4 permit is not applicable to the project because its scope is limited to the watersheds that drain to the coast within the San Diego RWQCB. The watershed in which the project is located generally conveys flow to the Salton Sea and is in the Colorado River Basin RWQCB, which does not have an equivalent MS4 permit that covers the project area.

County of San Diego Grading Ordinance

San Diego County Code of Regulatory Ordinances (County Code) Title 8, Division 7, Grading, Clearing and Watercourses (County Grading Ordinance), echoes protections at the federal level by prohibiting any actions or development that would impede water flows and addresses grading and clearing near watercourses. As outlined in Section 87.208 of the County Grading Ordinance, projects involving more than 200 cubic yards of grading, clearing, and/or removal of natural vegetation must obtain a Major Grading permit.

Chapter 4 of the County Grading Ordinance (starting at Section 87.401) includes requirements for the maximum slope allowed for cut and fill slopes, the requirement for drainage terraces on cut or fill slopes exceeding 40 feet in height, expansive soil requirements for cuts and fills, minimum setback requirements

for buildings from cut or fill slopes, and reporting requirements including a soil engineer's report and a final engineering geology report by an engineering geologist, which includes specific approval of the grading as affected by geological factors. Consistent with Section 87.428, the proposed project would also include a variety of measures to minimize fugitive dust (particulate matter 10 microns or smaller in diameter [PM_{10}]) during the construction phase.

Chapter 6 of the County Grading Ordinance (starting at Section 87.601) exists to protect persons and property against flood hazards by prohibiting the alteration of the surface of land so as to reduce the capacity of a watercourse and prohibit any action that impairs, impedes, or accelerates the flow of water in a watercourse in such manner that adversely affects adjoining properties. The ordinance prohibits any land alteration or construction of structures in, upon, or across a watercourse without first obtaining a permit. Enforcement occurs at the time that grading plans or improvement plans are reviewed during the grading permit process. The County Official shall not approve the grading plans or improvement plans without determining that the proposed grading does not create an unreasonable hazard of flood or inundation to persons or property. Even though the project site is not within an identified flood hazard area, as defined by either FEMA or the County, the provisions of this ordinance would apply to the project because they would result in land alteration and construction of structures within a watercourse as defined in the ordinance.

San Diego County Groundwater Ordinance

County Code Title 6, Division 7, Chapter 7, Groundwater, establishes regulations for the protection, preservation, and maintenance of groundwater resources. The purpose of the ordinance is to ensure that development would not occur in groundwater-dependent areas of San Diego County unless adequate supplies are available to serve both existing and proposed uses. Section 67.721 (Groundwater Impacted Basins) requires mapping of any potentially impacted groundwater basins. Any groundwater-impacted basin requires a groundwater investigation report. Section 67.722 regulates all areas within unincorporated San Diego County outside Borrego Valley. For applicable discretionary permit applications, the following findings must be included:

1. Groundwater Investigation. The application shall not be approved unless the approving authority finds, based upon the Groundwater Investigation or other available information, either:
    a. For a water intensive use, that groundwater resources are adequate to meet the groundwater demands both of the project and the groundwater basin if the basin were developed to the maximum density and intensity permitted by the General Plan; or
    b. For all other projects, that groundwater resources are adequate to meet the groundwater demands of the project.

San Diego County Watershed Protection, Stormwater Management, and Discharge Control Ordinance

County Code Sections 67.801 through 67.821, the Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO) was adopted in March 2008 and revised in February 2016. The purpose of the WPO is to protect water resources and improve water quality by controlling the non-stormwater discharges to the stormwater conveyance system and receiving waters, to cause the use of management practices by the County and its citizens that would reduce the adverse effects of polluted runoff discharges on waters of the state, to secure benefits from the use of stormwater as a resource, and to ensure the County is compliant with state and federal law. The WPO establishes standards and requirements that are legally enforceable by the County within the County's jurisdiction. Projects that require a permit (e.g., administrative permit, major use permit, grading permit) are required to demonstrate compliance with the WPO. Section 67.804, for example, specifically addresses waste discharge and prohibits the discharge of

pollutants to the stormwater system unless they are permitted through the NPDES program. Section 67.806 identifies minimum required construction and postconstruction water quality BMPs applicable to all dischargers.

County of San Diego BMP Design Manual

The 2020 *County of San Diego BMP Design Manual* (BMP Design Manual) (County of San Diego 2020) provides guidance for land development projects to comply with the 2013 MS4 permit. It is focused on project design requirements and related postconstruction requirements, not on the construction process itself. The BMP Design Manual addresses, and provides guidance for complying with, updated postconstruction stormwater requirements for Standard Projects and Priority Development Projects, and provides updated procedures for planning, preliminary design, selection, and design of permanent stormwater BMPs based on the performance standards presented in the MS4 permit and the County WPO. The proposed project is located east of the Pacific/Salton Divide and is not classified as a Priority Development Project. Requirements that apply to all projects including Standard Projects include implementation of source control and site design BMPs as described in Chapter 4 of the BMP Design Manual. Detailed submittal requirements including documentation of each selected BMP are provided in Chapter 8 of the BMP Design Manual.

2.4.3 Analysis of Project Effects and Determination as to Significance

Guidelines for the Determination of Significance

For the purpose of this EIR, the following significance thresholds for hydrology and water quality are taken from the *County of San Diego Guidelines for Determining Significance: Hydrology and Water Quality* (County of San Diego 2021a). A significant impact would result if the project would:

- Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface water quality
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on- or off-site;
    - 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; or
    - Impede or redirect flood flows
- In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation
- Conflict with or obstruct implementation of a water quality control plan
- Result in substantial soil erosion or the loss of topsoil.

Additionally, the following significance thresholds for groundwater are taken from the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources* (County of San Diego 2023). A significant impact would result if the project results in any of the following:

- For proposed projects in fractured rock basins, a soil moisture balance, or equivalent analysis, conducted using a minimum of 30 years of precipitation data, including drought periods, concludes that at any time groundwater storage is reduced to a level of 50% or less as a result of groundwater extraction.
- As an initial screening tool, offsite well interference will be considered a significant impact if after a five year projection of drawdown, the results indicate a decrease in water level of 5 feet or more in the offsite wells. If site-specific data indicates alluvium or sedimentary rocks exist which substantiate a saturated thickness greater than 100 feet in offsite wells, a decrease in saturated thickness of 5% or more in the offsite wells would be considered a significant impact.

The remaining thresholds from the County's groundwater resources guidelines (County of San Diego 2023), provided below, are not applicable to the project. The significance guidelines for SGMA are not applicable as the Jacumba Valley Groundwater Basin is a very low-priority basin and not subject to SGMA. The Jacumba Valley Groundwater Basin is not in an overdraft condition, so the significance thresholds related to groundwater overdraft are also not applicable. The residential or subdivision projects involving multiple owners are excluded from the analysis below since the project is nonresidential. Additionally, the Highland Center Well and the Park Well are nonpotable water sources; therefore, the potable groundwater quality guidelines are not applicable.

- Applicants for projects using groundwater resources in a basin subject to the Sustainable Groundwater Management Act (SGMA) with an adopted groundwater sustainability plan are required to confirm the Project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin; or conflict with or obstruct implementation of a Sustainable Groundwater Management Plan. Proposed projects that cannot meet this guideline will be considered to have a significant impact.
- For fractured rock basins that have been demonstrated to be in an overdraft condition, any additional groundwater use will be considered a significant impact.
- Applicants for projects using groundwater resources in the Borrego Springs Subbasin are required to obtain the necessary water rights (i.e., Baseline Pumping Allocations) prior to extracting groundwater. Prior to approval of a Project, the Applicant shall demonstrate to the satisfaction of the Director the ability to obtain necessary BPA.
- (Fractured Rock Basins) As an initial screening tool, offsite well interference will be considered a significant impact if after a five-year projection of drawdown, the results indicate a decrease in water level of 20 feet or more in the offsite wells. If site-specific data indicates water bearing fractures exist which substantiate an interval of more than 400 feet between the static water level in each offsite well and the deepest major water bearing fracture in the well(s), a decrease in saturated thickness of 5% or more in the offsite wells would be considered a significant impact.
- Proposed projects requiring groundwater resources for uses associated with single-family residences require well production during the well test to be no less than 3 gallons per minute (gpm) for each well tested. Proposed projects that cannot meet this requirement will be considered to have a significant impact.
- Where analysis of a residential well test indicates that greater than 0.5 feet of residual drawdown is projected, the project will be considered to have a significant impact.
- The analysis of the residential well test must indicate that the amount of drawdown predicted to occur in the well after five years of continual pumping at the rate of projected water demand (a) will not interfere with the continued production of sufficient water to meet the needs of the anticipated residential use(s), and (b) must be less than the saturated depth of water above the pump intake or

100 feet, whichever is less. (The pump intake is assumed to be 50 feet above the bottom of the well). Proposed projects that cannot meet this guideline will be considered to have a significant impact.

- Groundwater resources for proposed projects requiring a potable water source must not exceed the Primary State or Federal Maximum Contaminant Levels (MCLs) for applicable contaminants. Proposed projects that cannot demonstrate compliance with applicable MCLs will be considered to have a significant impact. In general, projects will be required to sample water supply wells for nitrate, bacteria (fecal and total coliform), and radioactive elements. Projects may be required to sample other contaminants of potential concern depending on the geographical location within the County.

2.4.3.1 Hydrology and Drainage Patterns

Guidelines for the Determination of Significance

The following significance thresholds are taken from the *County of San Diego Guidelines for Determining Significance: Hydrology and Water Quality* (County of San Diego 2021a). A significant impact would result if the project would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:
    - 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; or
    - Impede or redirect flood flows
- Result in substantial soil erosion or the loss of topsoil.

Analysis

To analyze the potential impacts of the project in relation to the hydrology and drainage patterns threshold, watershed hydrologic runoff calculations were performed for the 100-year storm event using the San Diego Unit Hydrology (SDUH) software. Additionally, an analysis of the 100-year flood level was conducted using the Hydrologic Engineering Centers River Analysis System (HEC-RAS) software (see Appendix G.1).

The project site currently consists primarily of undeveloped land and scattered brush; most areas of the project receive run-on from undeveloped tributary watersheds. Throughout the project site, there are various dirt roads and scattered culverts sized for low-flow conditions. The existing culverts are not designed to convey the 100-year peak flow without overtopping; rather, they allow for dry-weather crossing during moderate storms. In large storms, stormwater runoff overtops the respective dirt road in all cases (see Appendix G.1).

Project construction would involve clearing and grubbing of the existing vegetation within the 588-acre project site. Proposed improvements within the project site include minor grading limited to at-grade access roads, small pads for electrical equipment, and the softening of contours to support installation of the photovoltaic panels. Grading is expected to be balanced, with approximately 350,000 cubic yards of cut redistributed across the site. Project conditions following construction are estimated to increase impervious

surface by approximately 10.49 acres (see Appendix G.1). Proposed impervious areas include concrete pads for electrical equipment, solar panel posts, and water tanks. Consistent with project design feature **PDF-HY-1**, all project components located within the 100-year floodplain would comply with the County Flood Damage Prevention Ordinance (County Code Sections 811.101 through 811.602) and would be elevated 1 foot above base flood elevation.

The project would not increase runoff velocities or peak flow rates leaving the site (see Appendix G.1). Existing contours of the site would be softened to reduce the potential for rill erosion. Stormwater runoff, sheet flow, and shallow-concentrated flow would flow overland across the project site in a similar manner as it does in its existing state. Runoff would discharge from each respective area of the site as shallow concentrated flow. Two detention basins and subgrade storage pipes would reduce peak flow to less than existing conditions before runoff is discharged from the project site. One detention basin would be in Area A-2 adjacent to the battery energy storage system (BESS) and the other would be adjacent to the project substation.

The project would not cause flooding downstream, nor would it hydraulically impact downstream stormwater infrastructure. The project's preliminary grading plans (see Appendix B.2) and SWQMP (see Appendix G.3) include details on the location and type of BMPs necessary to further reduce the potential for erosion control and stormwater velocity reduction. These include temporary BMPs to be implemented during construction and permanent BMPs to be installed and maintained, per the Standard SWQMP and the California Department of Transportation (Caltrans) *Construction Site Best Management Practices (BMP) Manual* (Caltrans 2017). These BMPs include spillways, hydroseeding, fiber rolls, silt fencing, construction road stabilization, and other erosion control methods. Therefore, grading on the project site would not change the overall drainage pattern or result in the diversion of flow, as compared to existing conditions.

The project site access roads would be primarily constructed with decomposed granite; however, in areas where noticeable concentrated stormwater flow crosses over a road, concrete would be used for short lengths to reduce maintenance, prevent erosion, and prolong usage for a majority of runoff-producing storm events. Concrete and upstream/downstream riprap would be added to locations where concentrated flow crosses the on-site access roads to protect against erosion. Three existing on-site private culverts would be upgraded and lengthened to accommodate the on-site access roads. Additionally, rock-lined flow paths would be in specific locations through the site, to protect the natural banks from scour and increase the roughness of the channel to slow the velocity of flows exiting the site. In addition, infiltration swales may be installed within certain subbasins within the project site to accommodate small, localized increases in peak flow under a 100-year storm event. Further, the portions of the project site not overlain by roads, inverters, battery storage containers, the substation, and the switchyard facilities shall be reseeded with a native hydroseed mix to provide vegetation cover during project operations in accordance with project design feature **PDF-HY-3**. These measures would be effective at minimizing the potential adverse effects of all project-related increases in localized peak flow rates (i.e., around the base of solar panels).

The project proposes to fence the individual panel areas with chain-link fencing. Sediment, detritus, and/or other debris that becomes trapped on one side of the perimeter fencing during high flows could cause flow to back up behind the impediment, potentially redirecting and/or concentrating flow outside the boundaries of currently mapped washes. Therefore, proposed breakaway chain-link fencing will be located where flows are perpendicular to the fencing, thus not altering drainage patterns and/or block or redirect flood flows, which would cross ephemeral washes at a perpendicular angle and potentially trap sediment and detritus during heavy rainfall. It could result in additional scour and/or sedimentation that would not have otherwise occurred absent the panel area fencing. For this reason, project impacts related to alteration of drainage patterns would be **potentially significant (Impact HY-1).**

The existing condition and proposed condition peak flows calculated for the 100-year, 24-hour storm event using the SDUH for each of the project subbasins previously described indicates that there would not be an increase in peak discharge or peak velocities (see Appendix G.1). As such, impacts that result from increased velocities and peak flow rates exiting the project site that would cause flooding downstream or exceed the stormwater drainage system capacity are **less than significant**.

2.4.3.2 Flood Hazards and Risk of Pollutant Release

Guidelines for the Determination of Significance

The following significance thresholds are taken from the *County of San Diego Guidelines for Determining Significance: Hydrology and Water Quality* (County of San Diego 2021a). A significant impact would result if the project would:

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation

Analysis

No portion of the project site is located within a special flood hazard area (FEMA 2024). The project site is designated as Zone D, areas in which flood hazards are undetermined, as no analysis of flood hazards has been conducted. However, the DWR Flood Awareness Map indicates that the area is within an Awareness Floodplain, based on non-detailed studies identifying potential 100-year flood hazard areas outside of FEMA-mapped zones.

Although the site does not have a determined flood level or detailed studies identifying potential 100-year flood hazard areas, multiple drainages traverse the site and may cause flooding after rain or a storm. Flow and flooding related to the project developed upon existing conditions were modeled in relation to the 100-year flood using the SDUH and HEC-RAS (see Appendix G.1). On-site flood depths estimated for a 100-year flood event are less than 5 feet; the average depth is about 3 feet across the portion of the project site subject to flooding. The project would implement **PDF-HY-1** which avoids localized impediments to flow and damage to project components by placing on-site electrical equipment 1 foot above base flood elevation or outside the limit of the 100-year flood hazard zone.

In addition, the project site is not downstream of a dam or located in an area likely to be affected by mudflows or debris flows. Likewise, the project is not located within flood hazard, tsunami, or seiche zones and does not risk release of pollutants due to project inundation (California Department of Conservation 2024). Therefore, with the implementation of **PDF-HY-1**, the project would not risk the release of pollutants due to project inundation. Impacts would be **less than significant**.

2.4.3.3 Water Quality and Water Quality Control Plan

Guidelines for the Determination of Significance

The following significance thresholds are taken from the *County of San Diego Guidelines for Determining Significance: Hydrology and Water Quality* (County of San Diego 2021a). A significant impact would result if the project would:

- Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface water quality
- Conflict with or obstruct implementation of a water quality control plan

Analysis

The project site is located within the Jacumba Valley Groundwater Basin. DWR has designated the basin as very low priority (DWR 2019). Thus, neither the basin nor the groundwater extracted from the basin would be subject to a GSP, mandated by SGMA for DWR basins determined to be of medium to high priority.

Per the CGP, a SWPPP must be prepared and implemented during the construction phase. The SWPPP would include the project risk determination, identification of site runoff sampling locations, discussion of potential site pollutants, minimum BMPs, construction site monitoring plan, and the water pollution control drawings. The exact location and type of temporary BMPs to be installed during construction would depend on site-specific conditions, the construction schedule, and proposed activities, all of which would be outlined in the construction SWPPP. Typical BMPs for similar projects include energy dissipaters, silt fences, fiber rolls, gravel/sandbags, construction road stabilization, and stabilized construction entrances. As the project-specific SWPPP is prepared, the location, type, and number of specific BMPs may be refined based on the final designs to most effectively achieve the objective of reducing turbidity and other pollutant loads in stormwater runoff. The provisions of the CGP would ensure that site-specific conditions are taken into consideration when developing the construction SWPPP, that personnel developing and implementing the construction SWPPP are qualified, and that BMPs are adequately monitored and maintained.

Permanent water quality BMPs to be installed and maintained on the project site, per the BMP Design Manual, are also identified in the Standard SWQMP prepared for the project (see Appendix G.3). Private development projects are required to implement measures to ensure that pollutant discharges and runoff flows from development are reduced to the maximum extent practicable; and receiving water quality objectives are not violated throughout the life of the project. The Standard SWQMP includes details of construction and postconstruction BMPs to address potential and anticipated water quality impacts. Control measures to reduce the discharge of stormwater pollutants to the maximum extent practicable would include the following:

- Implementation of site design and source control BMPs
- Inclusion of low-impact development features that conserve natural features, set back development from natural water bodies, minimize imperviousness, maximize infiltration, and retain and slow runoff
- Compliance with requirements for construction-phase controls on sediment and other pollutants
- Outlet protection (e.g., energy dissipaters and velocity dissipation devices)
- Inclusion of infiltration swales where feasible to reduce localized increases in peak runoff

Construction of the project would have the potential to result in substantial additional sources of polluted runoff that would have short-term impacts on surface water quality through activities such as clearing and grading, stockpiling of soils and materials, concrete pouring, painting, and asphalt surfacing. Typically, solar facility construction includes equipment such as bulldozers, graders, water trucks, rollers, backhoe/trenching machine, excavator, heavy-duty rock trench, truck-mounted drilling rig, concrete trucks/concrete pumps, cranes, dump trucks, flatbed and low-bed trucks, pickup trucks, small hydraulic cranes, and rough-terrain cranes/forklifts. Pollutants associated with these construction activities that would substantially degrade water quality include soils, debris and other materials generated during clearing, fuels and other fluids associated with the equipment used for construction, paints, concrete slurries, asphalt, and other hazardous materials.

Pollutants associated with construction would degrade water quality if they are mobilized by stormwater or non-stormwater flows into surface waters. Sediment is often the most common pollutant associated with

construction sites because of the associated earthmoving activities and areas of exposed soil. Sediment that is washed off-site can result in turbidity in surface waters, which can impact aquatic species. In addition, when sediment is deposited into receiving water it can smother species, alter the substrate and habitat, and alter the drainage course. Hydrocarbons such as fuels, asphalt materials, oils, and hazardous materials such as paints and concrete slurries discharged from construction sites could also impact aquatic plants and animals downstream. Debris and trash could be washed into existing storm drainage channels to downstream surface waters and could impact wildlife and aesthetic value. However, as stated in Section 2.4.1, Existing Conditions, the average annual precipitation for the project area is low at 9.64 inches per year. Therefore, runoff from the project site is anticipated to be minimal during construction and would likely be concentrated in the ephemeral Boundary Creek, where planned construction is minimal. However, it is recognized that infrequent floods have the potential to inundate portions of the project site.

Under the NPDES CGP permit program, SWPPPs are prepared and the BMPs identified in the SWPPPs are implemented for construction sites greater than 1 acre to reduce the occurrence of pollutants in surface water. In compliance with applicable construction permits, the project would implement BMPs that minimize ground disturbance, protect slopes, reduce soil erosion, and limit or prevent various pollutants from entering surface water runoff.

The project's grading plans shall include details on the location and type of BMPs necessary to reduce the potential for project-induced erosion and scour, including temporary BMPs to be implemented during construction (per the statewide CGP), and permanent BMPs to be installed and maintained (per the Standard SWQMP). The exact location and type of temporary BMPs to be installed during construction depend on site-specific conditions, construction schedule, and proposed activities, all of which are outlined in the construction SWPPP that has been prepared for the project. Typical temporary BMPs used for similar projects include energy dissipaters, silt fences, fiber rolls, gravel/sandbags, construction road stabilization, and stabilized construction entrances. As the project-specific SWPPP is prepared, the location, type, and number of specific BMPs may be refined based on the final designs to most effectively achieve the objective of reducing turbidity and other pollutant loads in stormwater runoff. The provisions of the CGP ensure that site-specific conditions are taken into consideration when developing construction SWPPPs, that personnel developing and implementing construction SWPPPs are qualified, and that BMPs are adequately monitored and maintained.

During operations and maintenance (O&M), non-stormwater discharges would mainly include solar panel washing. At a rate of 0.81 af per year, applied over the solar facility's approximate 588 developed acres, water from panel washing would amount to less than 0.001 inch of wash water that might reach the soil. Such a small quantity would most likely not be sufficient to infiltrate to groundwater and would, instead, evaporate from the wetted soil. Thus, water applied for during O&M is unlikely to appreciably affect groundwater or surface water features and would have little to no potential to cause or contribute to exceedances of water quality objectives. Therefore, these activities would not violate Basin Plan standards or otherwise cause a significant threat to water quality.

The Standard SWQMP prepared as part of the project (see Appendix G.3) includes details of construction and postconstruction BMPs to address potential and anticipated water quality impacts. By implementing the pollution control measures to be included in the SWPPP and SWQMP, as well as the appropriate monitoring program included there within, the project would limit the possibility of contributing contaminants that might exceed local water quality objectives or contribute to the degradation of beneficial uses. The project would comply with the County stormwater standards manual (County of San Diego 2003a), County Code Section 67.813 (Inspection/Sampling), as amended, and County Code Section 67.811 (Additional Requirements for Land Disturbance Activities). Release of trash, sediment, and other construction-related pollutants from the project site would be controlled and minimized through preparation and implementation of a construction SWPPP and a Standard SWQMP, as previously described.

Impaired Water Bodies

As discussed in Section 2.4.1.3, Surface Water Quality, there are no impaired water bodies in the vicinity of the project site. However, the watershed in which the project site is located generally conveys flow indirectly to the Salton Sea, which is an impaired water under the CWA Section 303(d). CWA Section 303(d) impairments associated with the Salton Sea include arsenic, selenium, nutrients, salinity, chlorpyrifos, DDT, and enterococcus. These are impairments typically associated with agricultural activities, ranching, and/or surface mining (SWRCB 2022).

As discussed in Section 2.4.1.3, Surface Water Quality, stormwater runoff and non-stormwater discharges associated with construction and operation of the proposed project are unlikely to cause or contribute to water quality impairments related to these impairments as listed on the CWA 303(d) List of Water Quality Limited Segments. Additionally, while the project site may be indirectly connected to the Salton Sea watershed, due to the arid climate and the site's distance from the Salton Sea (approximately 45 miles), stormwater runoff from the project site is unlikely to reach these features before infiltrating into the ground or evaporating. The project would also not likely contribute to sediment loads since the stormwater and authorized non-stormwater discharges from the project site would represent a negligible fraction of the watershed.

Drinking Water Reservoirs

The project site does not drain into a drinking water reservoir. As discussed above, the project would implement measures to minimize adverse effects to water quality runoff exiting the project site. Regardless, the amount of water discharged from the project site in response to local rainfall is negligible when considered in the context of the total discharge from the entire watershed. Therefore, the project's contribution of pollutants to a hypothetical drinking water reservoir, if any, would not be substantial enough to exceed primary state or federal MCLs.

Stormwater Quality

As discussed in Section 2.4.1.2, Regional Hydrology and Drainage, a range of state and local water quality regulations and ordinances apply to the project that require the applicant to submit and implement a project-specific SWPPP during construction and a Standard SWQMP for O&M activities.

Because the project would consist of more than 1 acre, the applicant would be required to submit an NOI to the SWRCB to obtain approval to carry out construction activities under the CGP. This permit would include a number of design, management, and monitoring requirements for the protection of water quality and the reduction of construction-phase impacts related to stormwater (and some non-stormwater) discharges. Permit requirements would include preparation of a SWPPP, implementation and monitoring of BMPs, implementation of best available technology for toxic and non-conventional pollutants, implementation of best conventional technology for conventional pollutants, and periodic submittal of performance summaries and reports to the Colorado River Basin RWQCB. The SWPPP would apply to the project as a whole and would include reference to the major construction areas, temporary materials staging areas, access roads, and work associated with generation-tie (gen-tie) line facilities. BMPs to be implemented in accordance with the SWPPP and the Standard SWQMP would address alteration of drainage patterns, velocity and peak flow rates, and erosion control.

Non-Stormwater Discharges

Non-stormwater discharges during construction would include periodic application of water for dust control. Since the practice of dust control is necessary during windy and dry periods to prevent wind erosion and dust plumes, water would be applied in sufficient quantities to wet the soil, but not so excessively so

as to produce runoff from the construction site. Water applied for dust control would either quickly evaporate or locally infiltrate into shallow surface soils. This means that water applied for dust control is unlikely to appreciably affect groundwater or surface water features and thus would not cause or contribute to exceedances of water quality objectives contained in the Basin Plan. The project is not classified as a facility requiring coverage under the General Permit for Storm Water Discharges Associated with Industrial Activities.

Conclusion

For the previously stated reasons, the project would not violate applicable water quality objectives or WDRs and would comply with all federal, state, and local laws addressing water quality in stormwater and non-stormwater discharges. As implementation of the Standard SWQMP (and the construction and operational BMPs described therein) is a condition of the project, adverse impacts associated with water quality would be **less than significant**.

2.4.3.4 Groundwater Resources

Guidelines for the Determination of Significance

The following thresholds of significance are taken from the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources* (County of San Diego 2023). A significant impact would result if the project results in any of the following:

- For proposed projects in fractured rock basins, a soil moisture balance, or equivalent analysis, conducted using a minimum of 30 years of precipitation data, including drought periods, concludes that at any time groundwater storage is reduced to a level of 50% or less as a result of groundwater extraction.
- As an initial screening tool, offsite well interference will be considered a significant impact if after a five year projection of drawdown, the results indicate a decrease in water level of 5 feet or more in the offsite wells. If site-specific data indicates alluvium or sedimentary rocks exist which substantiate a saturated thickness greater than 100 feet in offsite wells, a decrease in saturated thickness of 5% or more in the offsite wells would be considered a significant impact.

Analysis

50% Reduction of Groundwater in Storage

Construction

During construction activities, the project would primarily use water for dust control during earthwork and grading. Concrete used during construction would be imported from off-site, and no concrete mixing would take place. No pre-wetting of the ground surface prior to grading would take place, and no water demand for noxious weed mitigation is assumed.

Phase I of the project would be constructed over 125 acres with 75,314 cubic yards of grading. The Phase I gen-tie line construction would disturb an additional 0.2 acres. Water used for hydroseeding would be applied at 2,500 gallons per acre to the disturbed area and daily dust control water would be applied. The Phase I construction water demand estimate is 14.8 af (Table 2.4-1). See Appendix G.4 for additional details regarding construction water demand.

Table 2.4-1. Estimated Construction Water Demand for Phase I

Activity	Description	Total Water Demand (af)
Mass Grading	Grading of 75,314 cubic yards. Uses an estimated on-site soil moisture content of 2% and optimum soil moisture content of 9% to gain compaction to determine required input of water	**11.2**
Daily Dust Control	Assumes 3,300 gallons per acre with or without tackifier. Half of the construction area, would not be continuously disturbed, and one application of water with tackifier would be sufficient for dust suppression per day. Water and tackifier would be applied to the remaining area three times per day.	**2.5**
Other Construction Needs	Water necessary for other construction needs, such as filling tanks for fire protection and hydroseeding	**1.05**
Total Phase I Construction Water Use		**14.8**

Source: INTERA (2025a) (see Appendix G.4)

Phase II of the project would be constructed over 436 acres with 274,686 cubic yards of grading. The Phase II gen-tie line construction would disturb an additional 0.2 acres. Water used for hydroseeding would be applied at 2,500 gallons per acre to the disturbed area, and daily dust control water would be applied. The Phase II construction demand estimate is 53.1 af (Table 2.4-2). See Appendix G.4 for additional details regarding construction water demand.

Table 2.4-2. Estimated Construction Water Demand for Phase II

Activity	Description	Total Water Demand (af)
Mass Grading	Grading of 75,314 cubic yards. Uses an estimated on-site soil moisture content of 2% and optimum soil moisture content of 9% to gain compaction to determine required input of water	**40.8**
Daily Dust Control	Assumes 3,300 gallons per acre with or without tackifier. Half of the construction area, would not be continuously disturbed, and one application of water with tackifier would be sufficient for dust suppression per day. Water and tackifier would be applied to the remaining area three times per day.	**8.8**
Other Construction Needs	Water necessary for other construction needs, such as filling tanks for fire protection and hydroseeding	**3.4**
Total Phase II Construction Water Use		**53.1**

Source: INTERA (2025a) (see Appendix G.4)

Operations and Maintenance

Project operation would require water for nonpotable use, dust control, panel washing, and fire protection. No landscaping irrigation is proposed for the operation and maintenance (O&M) of the proposed project. During operation, the project would require water for panel washing up to one time per year. Similar solar photovoltaic operations use approximately 0.3 gallons of water per square yard of panel. Based on the planned 20-MW capacity of the proposed project during Phase I, approximately 50,700 panels at approximately 30.8 square feet per panel totaling 1,560,000 square feet (173,333 square yards) may be washed up to one time per year. Annual water demand for Phase I panel washing would be up to approximately 0.16 af. Based on the planned 80-MW capacity of the proposed project during Phase II, approximately 202,744 panels at approximately 30.8 square feet per panel totaling 6,383,440 square feet (709,271 square yards) may be washed up to one time per year. Annual water demand for Phase II panel

washing would be approximately 0.65 af. Once both phases are operational, the annual panel washing water demand would be 0.81 af (see Appendix G.4).

Decommissioning

Activities associated with decommissioning would not include substantial earthmoving. It is estimated that the amount of water necessary to dismantle the solar facility would be less than that required for construction because there would be no need to use water to hydrate and compact on-site fills. The activities associated with decommissioning would not include grading. The only water demand during decommissioning would be for dust suppression and would be supplied by two 6,000-gallon water trucks. Phase I would require a water demand of 2.4 af for decommissioning, and Phase II would require 4.2 af for decommissioning for a total of 6.6 af (see Appendix G.4).

Conclusion

The Phase I construction water demand estimate is 14.8 af, and the Phase II construction demand estimate is 53.1 af. The total estimated construction water demand is 67.9 af. Once both phases are operational, annual panel washing water demand would be 0.81 af per year. Decommissioning of both phases would require 6.6 af of water. Overall, the project would use approximately 98.8 af of nonpotable water during construction, O&M, and decommissioning, assuming a project lifetime of 30 years.

The groundwater resources investigation report for the project (see Appendix G.5) presents an updated estimate of groundwater in storage, including methodology, calculations, and results. The estimate evaluates whether the water demands would maintain at least 50% of groundwater in storage over the 2,061-acre Jacumba Valley alluvial aquifer. Groundwater recharge is not included in the methodology to evaluate a worst-case scenario during a drought period with little to no recharge to the Jacumba Valley alluvial aquifer. The total nonpotable JCSD water demand for the proposed project and reasonably foreseeable projects over a 35-year period is 487.6 af.

JCSD extracts nonpotable groundwater from the Jacumba Valley alluvial aquifer on a limited basis. Nonpotable groundwater extraction is not suitable for human use, and its sale is used to defray the operating costs of the JCSD system for its residential and commercial customers. The groundwater basin in 2023 is estimated to have 8,639 af in storage, approximately 73.4% of the 11,870 af in storage that was estimated in 2007. Assuming no recharge to the aquifer, the proposed groundwater extraction of 487.6 af would reduce groundwater in storage in the basin to 8,151 af, approximately 68.7% of the storage that was estimated in 2007. Basin groundwater storage would remain above the County's determination of significance criterion of 50%. Therefore, impacts to groundwater storage would be **less than significant**.

Well Interference for Wells in Alluvial Basins

To assess the potential for groundwater extraction to draw down the groundwater table to the detriment of nearby groundwater-dependent habitat, or to cause well interference, projected drawdown within a 0.5-mile radius of the Highland Center Well and the Park Well was estimated. Pumping scenarios of 1 year and 5 years were used to calculate the potential long-term impacts on nearby groundwater-dependent habitats and off-site production wells. The closest active off-site well to both the Highland Center Well and Park Well is Well Km, owned by the Jacumba Valley Ranch Water Company.

Drawdown at the nearest off-site well and potential groundwater-dependent habitat was estimated under 1-year and 5-year scenarios for both the Highland Center Well and Park Well. The Highland Center 1-year scenario estimated drawdown based on the construction water demand of 139 af extracted from the Highland Center Well for 1 year. The Park Well 1-year scenario also estimated drawdown based on the

construction water demand of 139 af. The 5-year scenario, used for both the Highland Center Well and Park Well, estimates drawdown based on the combined total of construction water demand (278 af) and 3 years of O&M demand (5.06 af/yr). The total 5-year demand would be 293.18 af spread out over 5 years, equal to 58.65 af/yr or a continuous 36.5 gpm.

Drawdown at the closest off-site groundwater well (Well Km) to the Highland Center Well under the 1-year and 5-year scenarios would be 1.56 feet and 0.75 feet, respectively. Drawdown at the closest off-site groundwater well (Well Km) to the Park Well under the 1-year and 5-year scenarios is predicted to be 1.56 feet and 0.75 feet, respectively. Therefore, the estimated drawdown from both the Highland Center Well and the Park Well at the nearest off-site well, Well Km, would be less than the County threshold of significance of a decrease in groundwater level of 5 feet or more for an alluvial well.

Since actual conditions during groundwater extraction may vary from theoretical analysis, a groundwater monitoring and mitigation plan (GMMP) is a typical condition of approval for by the County for utility-scale renewable projects that are groundwater-dependent and ensures that pumping does not significantly impact existing well users. Thus, a GMMP has been prepared for the proposed project (see Appendix G.2). Incorporation of **PDF-HY-2** would ensure that the project would implement the GMMP (Section 2.4.6, Mitigation Measures and Project Design Features). With the implementation of **PDF-HY-2**, the total volume and rate of groundwater extracted from Highland Center Well and Park Wells would be monitored and documented throughout the duration of the project pumping. The implementation of **PDF-HY-2** would also provide for monitoring of the overall groundwater level in the project area. Therefore, impacts related to well interference would be **less than significant.**

2.4.4 Cumulative Impact Analysis

The geographic scope of cumulative effects on hydrology and water quality differs somewhat depending on the issue being addressed. The geographic scope for surface water quality and hydrology is typically watershed-based, whereby projects contributing flow to the same water bodies as the project would be considered. For groundwater impacts, the geographic scope of cumulative effects would be the groundwater aquifer affected by the project.

Project impacts to both surface water and groundwater resources were found to be less than significant. In the cumulative context, for wells within the same subbasin, each well's extraction adds to the cumulative drawdown of the basin as a whole, even if the volume relative to total basin storage is negligible or minor. Projects considered in the cumulative scenario include other known utility-scale renewable energy projects supplied nonpotable water by JCSD.

2.4.4.1 Cumulative, Hydrology, Drainage Patterns, and Water Quality

In the absence of regulatory controls, the primary impact of the project in the cumulative scenario would be alteration of the natural hydrology of the region through increases in the area covered by impervious surfaces, development of access driveways and utility corridors, and the release of non-point-source pollutants (e.g., motor fuels, trash, sediment). The typical impact of substantial increases in impervious surfaces is that peak flows within the watershed's drainages are greater in magnitude, shorter in duration, and more responsive to storm events, since a greater portion of precipitation is carried by surface runoff rather than percolated into the soil. New roads and/or transmission line corridors can often block or redirect stormwater flows if improperly designed. These impacts are undesirable with respect to flood hazards, water quality, and habitat quality.

However, the preliminary drainage study (see Appendix G.1) determined that the project would produce approximately 10.49 acres (0.0163 square mile) of impervious area. The impervious area would include the proposed concrete pads for electrical equipment, solar panel posts, and water tanks. The proposed all-weather access road would remain pervious. The preliminary drainage study determined that the additional impervious area represents 0.0068% of the watershed that is contributing to the drainage passing through the proposed site. This increase in impervious area constitutes a small enough area that would not change the overall drainage pattern. The water runoff would flow overland across the project site in a similar manner as it does in the predeveloped state. Thus, the additional impervious area would have minimal to no impact on existing watershed hydrologically (see Appendix G.1). Therefore, hydrology and drainage pattern impacts **would not be cumulatively considerable**.

2.4.4.2 Cumulative, Flood Hazards and Risk of Pollutant Release

A flood hazard analysis has not been conducted by FEMA for the project site, nor for much of the surrounding areas, and thus, a federally established flood risk has not been determined. The project site is not located within a 100-year floodplain area or other special flood hazard area as shown on a FIRM, a County Flood Plain Map, or County Alluvial Fan Map. In addition, no dams upstream of either the proposed project site or surrounding project sites have been identified; thus, these projects would not be subject to inundation in the event of a dam failure. Also, these sites would not be subject to seiche or tsunami (due to the great distance to the ocean or large body of water).

Flood hazard of the proposed project was evaluated in the preliminary drainage study (see Appendix G.1) using SDUH and HEC-RAS to estimate on-site flood inundation limits and depths for a 100-year flood 24-hour storm. The report determined that on-site flood depths estimated for a 100-year flood event are less than 5 feet for Area A (North) Node 106, Area A (North) Node 128, Area A (North) Node 156, Area A (North) Node 165, and Area A (North) Node 129. The average depth is about 3 feet across the portion of the project site subject to flooding. The proposed project would implement **PDF-HY-1**, which avoids localized impediments to flow and damage to project components by placing on-site electrical equipment above or outside the limit of potential 100-year flood hazard zones. Therefore, with the implementation of **PDF-HY-1**, the proposed project would not contribute to any cumulative alteration of a floodway or increase flood depths and would not place any habitable structures nor unanchored impediments to flow in a 100-year floodplain area. In addition, the only potential impact caused by the proposed project (potential alteration of drainage patterns and flood flows by the panel area fencing) is localized in nature and would not compound any other watershed impacts. Therefore, the proposed project, along with other projects occurring in the area, would not cumulatively contribute to the alteration of a floodway, nor increased flood depth, and impacts **would not be cumulatively considerable**.

2.4.4.3 Cumulative, Water Quality and Water Quality Control Plan

The project, along with other projects occurring in the area, would be required to comply with applicable federal, state, and local water quality regulations. The project, along with other projects of greater than 1 acre (which includes most of the projects in the cumulative scenario), would be required to obtain coverage under the NPDES CGP, which requires project proponents to identify and implement stormwater BMPs that effectively control erosion and sedimentation and other construction-related pollutants. Further, nearly all projects identified in the cumulative scenario would meet the definition of "new development and redevelopment projects" under the San Diego County MS4 Permit. Such projects are required to implement site design; source control; and, in some cases, treatment control BMPs to control the volume, rate, and water quality of stormwater runoff from the project during long-term operations. This is implemented locally by the County by requiring new development projects to submit and implement a SWQMP. In addition, the only potential impact caused by the proposed project (potential alteration of drainage

patterns and flood flows by the panel area fencing) is localized in nature and would not compound any other watershed impacts.

The project site overlies the Jacumba Valley Groundwater Basin, which would not be subject to a GSP, mandated by the SGMA. As noted above, the proposed project is not expected to violate any water quality standards, and measures would be taken both during construction and throughout operation to prevent potential contaminants from leaving the site by runoff. All projects in the general vicinity of the proposed project would equally be required to comply with these regulations and standards; thus, through compliance with RWQCB requirements and a NPDES permit, implementation of a SWPPP, and coordination with the USACE for any applicable permits, the project would not cumulatively conflict with or obstruct implementation of the Basin Plan. For these reasons, impacts of the project on water quality and any applicable water planning document (i.e., Basin Plan and/or GSP) would **not be cumulatively considerable**.

2.4.4.4 Cumulative, Groundwater Resources

The analysis completed in the groundwater resources investigation report (see Appendix G.5) to evaluate the cumulative impacts of pumping to supply construction water included all current and future projects with an appreciable water demand within the watershed study area, and therefore constitutes a cumulative impact analysis. The groundwater resources analysis incorporated historical climate data, which includes historical periods of increased rainfall and periods of extended drought. The results of this analysis concluded that reduction in groundwater storage, well interference impacts, and impacts to groundwater-dependent habitat and water quality would be less than significant. In addition, other renewable projects occurring in the area, would be required to prepare a GMMP similar to the proposed project that would ensure that groundwater-level monitoring would be performed in groundwater wells and that groundwater levels would be recorded during groundwater extraction. Therefore, the proposed project, along with other projects occurring in the area, would **not be cumulatively considerable**.

2.4.5 Significance of Impacts Prior to Mitigation

2.4.5.1 Hydrology and Drainage Patterns

The proposed project would result in an increase of 10.49 acres of impervious surfaces, and thus would not result in substantial changes to the rate, volume, and location of stormwater runoff. The proposed project would intersect the Boundary Creek watercourse and an unnamed tributary of the creek; however, these features have been altered and are now discontinuous or disconnected within the survey area. The project would also implement **PDF-HY-3** and the required Standard SWQMP, SWPPP, and requirements to obtain permits from the USACE and RWQCB pursuant to the CWA.

Impacts to water surface elevation in a watercourse would be less than significant. Impacts that result from increased velocities and peak flow rates exiting the project site that would cause flooding downstream or exceed the stormwater drainage system capacity would also be less than significant. Because implementation of the Standard SWQMP (and the construction and operational BMPs described therein) is a condition of the Major Use Permit, adverse impacts associated with hydrology would be **less than significant**.

The project proposes to fence the individual panel areas with chain-link fencing. Proposed breakaway chain-link fencing would be located where flows are perpendicular to the fencing and thus would not alter drainage patterns and/or block or redirect flood flows, which would cross ephemeral washes at a perpendicular angle and potentially trap sediment and detritus during heavy rainfall. Sediment, detritus,

and/or other debris that becomes trapped on one side of the panel area fencing during high flows could cause flow to back up behind the impediment and potentially alter drainage patterns (**Impact HY-1**).

2.4.5.2 Flood Hazards and Risk of Pollutant Release

The project site is not located within a 100-year floodplain area or other special flood hazard area as shown on a FIRM, a County flood plain map, or County alluvial fan map. In addition, the project site is not downstream of a dam or located in an area likely to be affected by mudflows or debris flows. The project also does not propose any habitable structures. **PDF-HY-1**, as described in Section 2.4.6, has been incorporated into the proposed project design to ensure that solar panel structures, inverter/transformer platforms, battery storage containers and other electrical components would not be impediments to flow. The only element of the proposed project that might locally alter drainage patterns and/or block or redirect flood flows would be the perimeter fencing, which would cross ephemeral washes at a perpendicular angle, and potentially trap sediment and detritus during heavy rainfall. Sediment, detritus and/or other debris that becomes trapped on one side of the perimeter fencing during high flows could cause flow to back up behind the impediment, potentially redirecting and/or concentrating flow outside the boundaries of currently mapped washes. It could result in additional scour and/or sedimentation that would not have otherwise occurred absent the perimeter fencing. For this reason, the impact of the proposed project (perimeter fencing element) with respect to altering drainage patterns and/or blocking or redirecting flood flows would be **potentially significant** (Impact HY-1).

2.4.5.3 Water Quality and Water Quality Control Plan

The proposed project would have a less than significant impact with respect to water quality because (1) the proposed project would not directly discharge to an impaired water body; (2) construction and operational sources of pollutants, including sediment, trash, and fuels, would be addressed through implementation of both a SWPPP and a Standard SWQMP for the proposed project; (3) the project site does not drain to a drinking water reservoir in the United States; (4) the potential non-stormwater discharges associated with the proposed project would require approval from the Colorado River RWQCB or the SWRCB (General WDRs for Discharges to Land with a Low Threat to Water Quality); and (5) adverse effects to groundwater quality would not occur because potential threats to groundwater quality as a result of construction, operation, and maintenance of the proposed project would be addressed through compliance with a construction SWPPP during construction and an operational SWPPP during the operating life. Therefore, with compliance of existing regulations the proposed project would result in **less-than-significant impacts** to surface water and groundwater quality.

The project site overlies the Jacumba Valley Groundwater Basin, DWR Basin No. 7-47 (DWR 2016). DWR, however, has designated the basin as very low priority (DWR 2019). Thus, the basin and groundwater extracted from the basin would not be subject to a GSP, mandated by the SGMA for DWR basins determined to be of medium to high priority. The project is not expected to violate any water quality standards, and measures would be taken both during construction and throughout operation to prevent potential contaminants from leaving the site by runoff. Through compliance with RWQCB requirements and a NPDES permit, implementation of a SWPPP, and coordination with the USACE for any applicable permits, the project would not conflict with or obstruct implementation of the Basin Plan. Impacts would be **less than significant**.

2.4.5.4 Groundwater Resources

During operation of the project, water demand would not exceed the threshold of 50% reduction in groundwater storage, nor would the project result in well interference above significance criterion or significantly impact groundwater-dependent ecosystems. In addition, a GMMP has been prepared for the

proposed project (see Appendix G.2). Incorporation of **PDF-HY-2** would ensure that the project would implement the GMMP. The GMMP details groundwater thresholds for off-site well interference and groundwater-dependent habitat; with the implementation of **PDF-HY-2**, groundwater-level monitoring would be performed in several wells to record groundwater levels during groundwater extraction. Therefore, impacts to groundwater as a result of the proposed project would be **less than significant**.

2.4.6 Mitigation Measures and Project Design Features

2.4.6.1 Mitigation Measures

Mitigation measure **HY-1** would mitigate potential impacts under **Impact HY-1** as follows.

M-HY-1 **Flood Fencing**. Prior to approval of final design plans, the applicant shall demonstrate to the satisfaction of the County Department of Public Works (DPW) Flood Control through hydrologic and hydraulic analyses, acceptable to DPW Flood Control and performed by a California-licensed engineer in accordance with standard engineering practice, that the design features for the perimeter fencing avoids the blockage and/or redirection of storm flows resulting from the accumulation of debris and/or detritus at wash crossings. This can be accomplished through a number of means such as a) use of breakaway fencing perpendicular to flood flows to prevent obstruction and accumulation of debris, b) use of fencing that spans washes (without posts) above the anticipated peak flow depth, or c) an alternative design measure that would avoid accumulations of detritus at perimeter fence wash crossings, subject to County approval.

The applicant shall show the proposed fencing design or alternative design measure on the final grading plans. The associated drainage study shall contain hydrologic and hydraulic analyses, acceptable to DPW Flood Control and performed by a California-licensed engineer in accordance with standard engineering practice, that model the proposed fencing and/or design measures and demonstrate that the fencing shall not cause alteration of drainage patterns and/or flood hazards from pre-project conditions. The drainage study shall be in compliance with the County hydrology manual (County of San Diego 2003b) and the County hydraulic design manual (County of San Diego 2014).

Prior to the approval of any grading and/or improvement plans and issuance of grading or construction permits, the drainage study and plans shall be approved. The County DPW Flood Control shall review and approve the hydrologic and hydraulic analyses contained in the drainage study and the final fencing design and layout to ensure the flood flow is fully mitigated to pre-project conditions.

2.4.6.2 Project Design Features

The Applicant has identified and committed to including the following project design features as part of the project to alleviate adverse hydrology and water quality effects, to the extent feasible.

PDF-HY-1 **Compliance with Flood Damage Prevention Ordinance**. Prior to approval of final design plans, the County DPW will verify that all project components located within the 100-year floodplain will comply with the County of San Diego Flood Damage Prevention Ordinance, County hydrology manual (County of San Diego 2003b), and County hydraulic design manual (County of San Diego 2014), which includes elevating all solar panels at maximum tilt, inverter/transformer platforms, battery storage containers, and all electrical components 1 foot above base flood elevation.

PDF-HY-2 **Implementation of GMMP for JCSD**. To ensure nonpotable water purchased from the Jacumba Community Services District (JCSD) does not result in impacts to the aquifers accessed by JCSD's nonpotable water production wells (Highland Center Well and Park Well), the Starlight Solar Developer will implement the Groundwater Mitigation Monitoring and Mitigation Plan (GMMP) for the Flat Creek watershed.

A groundwater monitoring report will be completed by a Professional Geologist or Professional Engineer licensed in the state of California and will be submitted to County Planning and Development Services (PDS) annually no later than 28 days following the end of the calendar year. Groundwater monitoring reports should be submitted for 5 years after proposed project construction has commenced. After 5 years, County PDS should determine if continuous reporting is required based on the effects of groundwater extraction from the previous 5 years. The annual reports will include the following information:

- Groundwater-level hydrographs and tabulated groundwater-level data for each accessible well in the groundwater-monitoring network
- Tabulated groundwater production volumes from JCSD nonpotable wells
- Documentation of any changes in well pumping or groundwater well conditions for wells in the groundwater-monitoring network
- Documentation of groundwater-dependent habitat monitoring, if necessary, as described in the GMMP

If the baseline groundwater levels at the wells included in the groundwater monitoring network are exceeded by 5 feet, County PDS will be notified via letter and email within 1 working day of the exceedance, or immediately after the exceedance is recognized. Additionally, if groundwater-level thresholds at the off-site wells are exceeded by their respective thresholds, pumping of JCSD nonpotable wells for the project will cease and County PDS will be notified via letter and email within 1 working day, or immediately after the exceedance is recognized.

PDF-HY-3 **Vegetative Cover On-Site During Operation**. In order to provide dust control and minimize erosion during project operation, at least 70% vegetation cover will be maintained during project operation on the portions of the solar facility development footprint within the perimeter fencing not overlain by vehicle access driveways and internal access, inverter/transformer platforms, battery storage containers, and the substation. These areas will be reseeded with a native hydroseed mix that will be approved by the County Landscape Architect prior to reseeding. A biologist will also review the native hydroseed mix prior to reseeding for compatibility with native habitats in the project area. The Applicant will ensure that at least 70% of the hydroseeded area is covered with vegetation within 1 year of occupancy. If this coverage threshold is not met, additional native hydroseed applications must be conducted in order to meet the 70% threshold. The applicant will submit a written report with photographic evidence of the vegetative cover to the County Landscape Architect 1 year after occupancy. This report will also include documentation of the date of hydroseeding and the type of native hydroseed mix. Subsequently, a report with photographic evidence will be submitted to the County Landscape Architect biannually (every other year) during operation.

2.4.7 Conclusion

2.4.7.1 Hydrology and Drainage Patterns

Impacts to water surface elevation in a watercourse and impacts that result from increased velocities and peak flow rates would be less than significant. Because implementation of the Standard SWQMP (and the construction and operational BMPs described therein) is a condition of the Major Use Permit and the because the project would implement project design feature **PDF-HY-3** (vegetative cover during project operation), adverse impacts associated with hydrology would be **less than significant**.

Sediment, detritus and/or other debris that becomes trapped on one side of the proposed perimeter fencing during high flows could cause flow to back up behind the impediment and potentially alter drainage patterns. With implementation of mitigation measure **M-HY-1** (perimeter fence design), this impact would be reduced to **less than significant**.

2.4.7.2 Flood Hazards and Risk of Pollutant Release

The project site is not located within a 100-year floodplain area or other special flood hazard area as shown on a FIRM, a County flood plain map, or County alluvial fan map. In addition, the project site is not downstream of a dam or located in an area likely to be affected by mudflows or debris flows. The project also does not propose any habitable structures. Thus, under this guideline, **no impacts** would occur.

PDF-HY-1, as described in Section 2.4.6, has been incorporated into the proposed project design to ensure that solar panel structures, inverter/transformer platforms, battery storage containers and other electrical components would not be impediments to flow. The only element of the proposed project that might locally alter drainage patterns and/or block or redirect flood flows is the perimeter fencing. The impact of the perimeter fencing element with respect to altering drainage patterns and/or blocking or redirecting flood flows would be potentially significant. With implementation of mitigation measure **M-HY-1**, this impact would be reduced to **less than significant**.

2.4.7.3 Water Quality and Water Quality Control Plan

The proposed project would not violate applicable water quality objectives or WDRs and would comply with all federal, state, and local laws addressing water quality in stormwater and non-stormwater discharges. Therefore, the proposed project would not exceed the significance thresholds identified earlier, and impacts would be **less than significant**.

Through compliance with RWQCB requirements and NPDES permit, implementation of a SWPPP, and coordination with the USACE for any applicable permits, the project would not conflict with or obstruct implementation of the Basin Plan. Impacts would be **less than significant**.

2.4.7.4 Groundwater Resources

During operation of the project, water demand would not exceed the threshold of 50% reduction in groundwater storage, nor would the project result in well interference above significance criterion or significantly impact groundwater-dependent ecosystems. In addition, a GMMP has been prepared and included in the project. The GMMP details groundwater thresholds for off-site well interference and groundwater-dependent habitat; with the implementation of **PDF-HY-2**, groundwater-level monitoring would be performed in several wells to record groundwater levels during groundwater extraction. Therefore, impacts to groundwater as a result of the project would be **less than significant**.

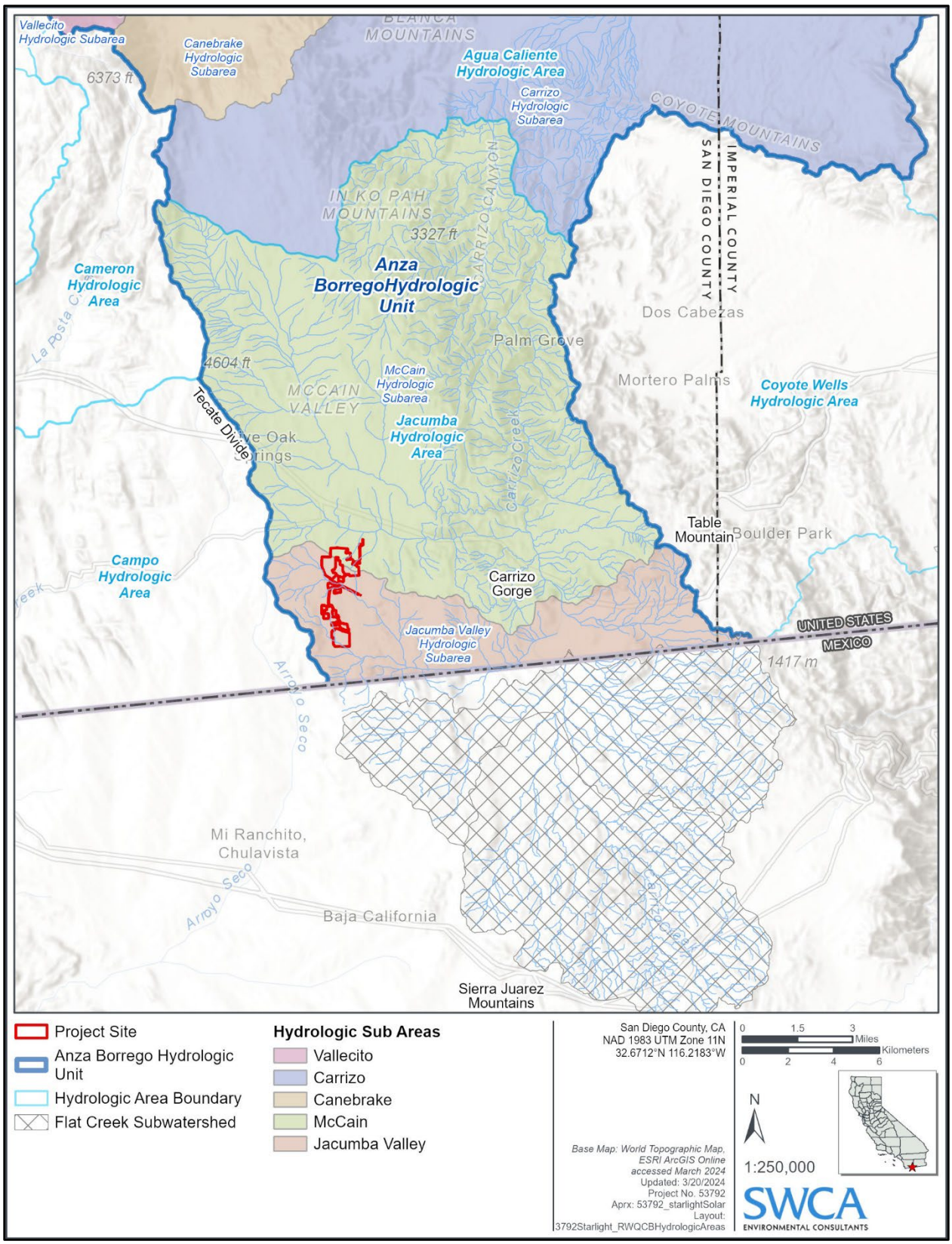

Figure 2.4-1. Hydrologic Subareas in the Project Vicinity

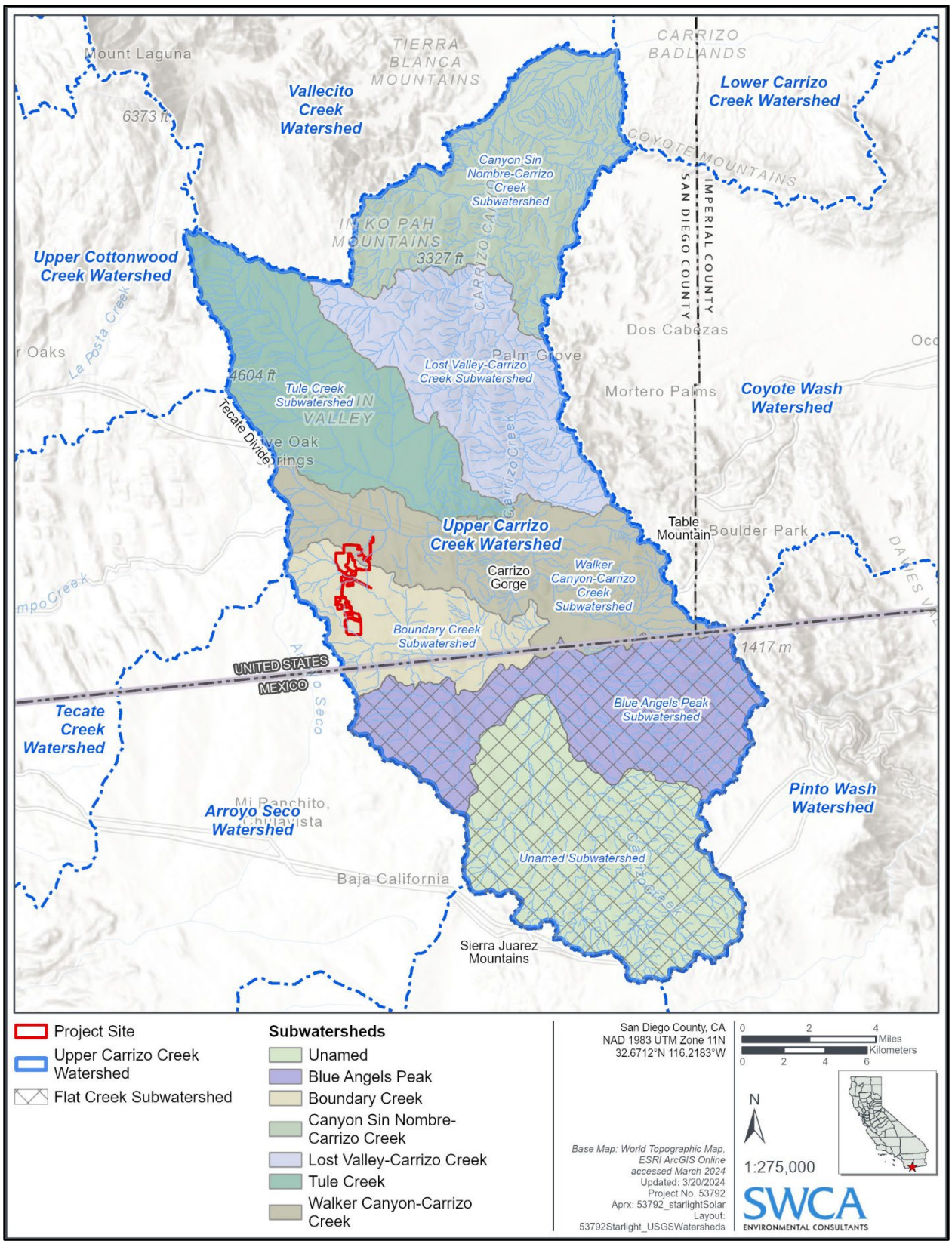

Figure 2.4-2. Subwatersheds in the Project Vicinity

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