

### 3.1.9 Utilities and Service Systems

This section discusses potential impacts to utilities and service systems, including water, wastewater, and solid waste hauling and disposal, resulting from the implementation of the Proposed Project. Electrical and natural gas systems are not included in this analysis because the Proposed Project would not require extension of natural gas services. The Proposed Project would either use existing electrical generation and transmission facilities or would construct such facilities as a part of the Proposed 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 report prepared for the Proposed Project:

- *Soitec Solar Portfolio Project, Emergency Service Capabilities Assessment and Cumulative Impact Mitigation Report* (Appendix 3.1.7-1).

For a discussion on impacts to stormwater drainage in the Proposed Project area, refer to Section 3.1.5, Hydrology and Water Quality.

#### 3.1.9.1 Existing Conditions

The Proposed Project would be located in the Mountain Empire Subregion of southeastern San Diego County (County), an approximately 285,000-acre, largely rural, low-density population area that generally lacks substantial utility infrastructure, such as water and wastewater distribution and collection systems.

Baseline utilities and service systems information was obtained through a review of the *Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the East County (ECO) Substation, Tule Wind, and Energia Sierra Juarez Gen-Tie Projects* (CPUC and BLM 2010), as well as of several websites as cited below.

##### 3.1.9.1.1 Regional Overview

#### Water

The Mountain Empire Subregion relies on groundwater to supply local water (County of San Diego 2011a). The availability of groundwater varies from location to location. Dense residential development is not a viable option because the area is totally dependent on groundwater resources for potable water (County of San Diego 2011b).

#### Wastewater

Wastewater services in the Mountain Empire Subregion are provided by small-scale waste treatment facilities or by private septic systems. There is no formal sanitation district in the community of Boulevard; wastewater is treated in private septic systems (CPUC and BLM 2011).

### Solid Waste

Residential solid waste disposal in unincorporated San Diego County was historically facilitated through the use of rural bin sites. Essentially, rural bin sites function as transfer stations at which residents dispose of residential waste, and licensed haulers transport the waste to an area landfill. However, as of May 1, 2009, all rural bin sites in unincorporated San Diego County were closed by Allied Waste Industries (County of San Diego 2012). Commercial waste hauling in the community of Boulevard is currently provided by eight companies, four of which also provide residential waste hauling services in the area (County of San Diego 2012). There are five permitted active landfills located within the County with remaining capacity. The landfills nearest the Boulevard area in San Diego County are the Sycamore Landfill in Santee (approximately 50 miles northwest of Boulevard) and the Otay Landfill in Chula Vista (approximately 45 miles west of Boulevard) (County of San Diego 2005). The Sycamore Landfill has a permitted disposal rate/throughput of ~~3,965–800~~ tons per day, and a remaining capacity of ~~4742,388246,428–551~~ cubic yards (as of ~~September 30, 2006~~February 28, 2011) (CalRecycle ~~2012a~~2014). The Otay Landfill has a permitted disposal rate/throughput of 5,830 tons per day, and a remaining capacity of 24,514,904 cubic yards (as of March 31, 2012) (CalRecycle ~~2012b~~2012a).

#### **3.1.9.1.2 Tierra del Sol**

The existing conditions for the Tierra del Sol solar farm site are similar to the existing conditions discussed above. For more details on the site-specific soils, hydrology, groundwater resources, and additional water resources, refer to Sections 3.1.2 and 3.1.5.

#### **3.1.9.1.3 Rugged**

The existing conditions for the Rugged Sol solar farm site are similar to the existing conditions discussed above. For more details on the site-specific soils, hydrology, groundwater resources, and additional water resources refer to Sections 3.1.2 and 3.1.5.

#### **3.1.9.1.4 LanEast**

The existing conditions for the LanEast solar farm site are similar to the existing conditions discussed above. For more details on the site-specific soils, hydrology, groundwater resources, and additional water resources refer to Sections 3.1.2 and 3.1.5.

#### **3.1.9.1.5 LanWest**

The existing conditions for the LanWest solar farm site are similar to the existing conditions discussed above. For more details on the site-specific soils, hydrology, groundwater resources, and additional water resources refer to Sections 3.1.2 and 3.1.5.

### 3.1.9.2 Regulatory Setting

#### Federal Regulations

There are no federal regulations, plans, or standards related to utilities and service systems that are relevant to the Proposed Project.

#### State Regulations

The following state regulations pertaining to utilities and service systems would apply to the Proposed Project.

##### California Integrated Waste Management Board Solid Waste Policies

Assembly Bill (AB) 939, the Integrated Waste Management Act, established an integrated waste management hierarchy to guide the California Integrated Waste Management Board (now the California Department of Resources Recycling and Recovery, or CalRecycle) and local agencies in the implementation of programs geared at (1) source reduction, (2) recycling and composting, and (3) environmentally safe transformation and land disposal. AB 939 also included waste diversion mandates that require all cities and counties to divert 50% of all solid waste through source reduction, recycling, and composting activities. The Integrated Waste Management Act also requires that each county provide capacity for solid waste generated within its jurisdiction which cannot be reduced or recycled for a 15-year period (CalRecycle ~~2012e~~2012b).

##### On-Site Wastewater Treatment Systems

California Water Code Section 13282 allows Regional Water Quality Control Boards (RWQCBs) to authorize a local public agency to issue permits for On-Site Wastewater Treatment Systems (OWTS) “to ensure that systems are adequately designed, located, sized, spaced, constructed and maintained.”

#### Local Regulations

##### County of San Diego Construction and Demolition Materials Ordinance

The County of San Diego Construction and Demolition Materials Ordinance (Sections 68.508 through 68.518 of the County Code of Regulatory Ordinances) is intended to increase diversion of construction and demolition materials from landfills in order to conserve landfill capacity and extend the useful life of local landfills. The ordinance requires that projects totaling over 40,000 square feet of construction prepare a debris management plan that specifies the type of project, total square footage of construction, and (among other items) the estimated volume and weight of construction and demolition debris that would be disposed of at a landfill. Applicants of

applicable projects are required to submit a performance guarantee (payment) to the County to ensure that the project complies with the diversion standards (i.e., projects shall recycle 90% inert construction and demolition debris and 70% of all other construction and demolition debris) of the Construction and Demolition Materials Ordinance.

### On-Site Wastewater Treatment Systems

The San Diego RWQCB has jurisdiction over San Diego County and has authorized the County of San Diego, Department of Environmental Health (DEH) to issue certain OWTS permits throughout the County and within the incorporated cities. Prior to issuing a permit, DEH reviews the project-specific locations of proposed OWTS pursuant to the DEH, Land and Water Quality Division's *Design Manual for Onsite Wastewater Treatment Systems* (DEH 2010).

In addition, projects having OWTS must comply with the San Diego County Code of Regulatory Ordinances, Title 6, Division 8, Chapter 3, On-Site Wastewater Treatment Systems and Improper Disposal of Sewage (Sections 68.301 through 68.361 of the County Code of Regulatory Ordinances). Provided that no public sanitary sewer system is available, the ordinance allows for installation of OWTS provided that the requirements and standards of the ordinance are complied with, and a permit issued by the DEH is obtained. Standards and requirements include, but are not limited to, soil percolation tests to determine soil suitability, the selection of a treatment system appropriate for the site conditions, and specific setback requirements from lakes, streams, ponds, slopes, and other utilities and structures. Chapter 6, Division 8, of Title 6 of the County Code pertains to Septic Tank and Cesspool Cleaners, which establishes processes, fees, and requirements for the examination, cleaning, and collection of sewage from septic tanks and cesspools.

### County of San Diego General Plan

The County of San Diego General Plan, Land Use Element, Community Services and Infrastructure section contains policies and objectives that were determined to be applicable to Proposed Project components under the jurisdiction of the County. Refer to Section 2.5.2 of this Program EIR for policies and objectives of the County of San Diego General Plan that are applicable to the Proposed Project.

### Coordination among Facility Planning, Financing Programs and Land Use Planning

- **Policy LA-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 LA-12.3: Infrastructure and Services Compatibility.** Provide public facilities and services that are sensitive to the environment with characteristics of the unincorporated communities. Encourage the collocation of infrastructure facilities, where appropriate.

### Water Supply

- **Policy LA-13.1: Adequacy of Water Supply.** Coordinate water infrastructure planning with land use planning to maintain an acceptable availability of a high quality sustainable water supply. Ensure that new development includes both indoor and outdoor water conservation measures to reduce demand.
- **Policy LA-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.

### Wastewater

- **Policy LA-14.1: Wastewater Facility Plans.** Coordinate with wastewater agencies and districts during the preparation or update of wastewater facility master plans and/or capital improvement plans to provide adequate capacity and assure consistency with the County's land use plans.
- **Policy LA-14.2: Wastewater Disposal.** Require that development provide for the adequate disposal of wastewater concurrent with the development and that the infrastructure is designed and sized appropriately to meet reasonably expected demands.
- **Policy LA-14.3: Wastewater Treatment Facilities.** Require wastewater treatment facilities serving more than one private property owner to be operated and maintained by a public agency. Coordinate the planning and design of such facilities with the appropriate agency to be consistent with applicable sewer master plans.
- **Policy LA-14.4: Sewer Facilities.** Prohibit sewer facilities that would induce unplanned growth. Require sewer systems to be planned, developed, and sized to serve the land use pattern and densities depicted on the Land Use Map. Sewer systems and services shall not be extended beyond either Village boundaries or extant Urban Limit Lines, whichever is more restrictive, except:
  - When necessary for public health, safety, or welfare;
  - When within existing sewer district boundaries;
  - When necessary for a conservation subdivision adjacent to existing sewer facilities;  
or
  - Where specifically allowed in the community plan.

- **Policy LA-14.5: Alternate Sewage Disposal Systems.** Support the use of alternative on-site sewage disposal systems when conventional systems are not feasible and in conformance with State guidelines and regulations.

The following policies identified in the General Plan, Conservation and Open Space Element would be applicable to Proposed Project components:

- **Policy COS-17.1: Reduction of Solid Waste Materials.** Reduce greenhouse gas emissions and future landfill capacity needs through reduction, reuse, or recycling of all types of solid waste that is generated. Divert solid waste from landfills in compliance with State law.
- **Policy COS-17.2: Construction and Demolition Waste.** Require recycling, reduction and reuse of construction and demolition debris.
- **Policy COS-17.6: Recycling Containers.** Require that all new land development projects include space for recycling containers.
- **Policy COS-19.1: Sustainable Development Practices.** Require land development, building design, landscaping, and operational practices that minimize water consumption.
- **Policy COS-19.2: Recycled Water in New Development.** Require the use of recycled water in development wherever feasible. Restrict the use of recycled water when it increases salt loading in reservoirs.

### Mountain Empire Subregional Plan

The Mountain Empire Subregional Plan (a supplement to the County General Plan) establishes goals and policies to guide development within the areas of Tecate, Potrero, Boulevard, Campo/Lake Morena, Jacumba, and the Mountain Empire Balance (including the community of Tierra del Sol) which together comprise the Mountain Empire Subregion of southeastern San Diego County. The goals and policies of the Subregional Plan are intended to be more specific than those of the County General Plan as they consider the distinct history, character, and identity of Mountain Empire communities.

Policies in the Mountain Empire Subregional Plan that relate to the Proposed Project are presented in the Section 2.5.2 of this Program EIR.

### Public Facilities and Services

- Uses proposed for property adjacent to substations or transmission line right-of-ways should be reviewed for possible impacts to the power facilities and vice versa.

### Boulevard Subregional Plan Area

Located within the Mountain Empire Subregion, the Boulevard Subregional Plan area encompasses approximately 55,350 acres and includes several unincorporated communities including (but not limited to) Boulevard, Live Oak Springs, and Tierra del Sol. The boundary of the Boulevard Subregional Plan Area can be seen on Figure 1-2, Specific Location Map. More specific than those of the General Plan, the policies of the Community Plan reflect the critical issues and concerns that are unique to the area, which includes protection and maintenance of the rural lifestyle and community character.

Policies of the Boulevard Subregional Plan that are associated with the Proposed Project are presented in Section 2.5.2 of this Program EIR.

- **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 8.2.1:** 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.
- **Policy CM 8.2.1:** Require that the source and quality of water that is imported into the area via tanker trucks or other means, for use on major construction projects, would be verified and validated to avoid contamination of local surface and groundwater resources.
- **Policy CM 8.5.2:** Require all engineered drainage projects to maximize stormwater filtration on-site to prevent the loss of groundwater recharge and unnecessary erosion.
- **Policy CM 8.7.1:** Encourage Zero Waste Management goals through increased recycling and reuse.

#### **3.1.9.3 Analysis of Project Effects and Determination as to Significance**

The Proposed Project consists of four renewable energy solar farms in southeastern San Diego County. The following impact analysis has been separated into discussions for each of the four solar farms: Tierra del Sol, Rugged, LanEast, and LanWest, as well as a combined discussion of the Proposed Project as a whole. For the purposes of this Program EIR, the Tierra del Sol and Rugged solar farms are analyzed at a project level, whereas the LanEast and LanWest solar farms are analyzed at a programmatic level as sufficient project-level data has not been developed at this time.

**3.1.9.3.1 Water**Guidelines for the Determination of Significance

The County's Guidelines for Determining Significance do not include significance thresholds or guidance for determining significance for impacts to utilities and service systems. Therefore, for the purpose of this EIR, Appendix G of the California Environmental Quality Act (CEQA) Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if the project would:

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Not have sufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements.
- Not meet the intent of environmental goals and policies of County planning regulations.

The only new water or wastewater treatment facilities to be constructed for the Proposed Project would be septic systems associated with each project's operations and maintenance (O&M) building, which is addressed below in Section 3.1.9.3.2. Groundwater wells already exist on site to supply each project with its operational needs (see below for a discussion water needs during construction), and no connection to a public water system would be required. As discussed in Section 3.1.5 Hydrology and Water Quality, subsection 3.1.5.3.3, a treatment system for drinking water to be supplied to each of the proposed O&M buildings would not need to be installed because water quality testing on the relevant on-site production wells has demonstrated the water to be potable and below California drinking water maximum contaminant levels (see also Appendices 3.1.5-5 and 3.1.5-6). For these reasons, the Proposed Project would not require or result in the construction of new water or wastewater treatment facilities which could cause significant environmental effects.

In addition, because the subject groundwater basin is not in overdraft or adjudicated, the question of entitlements is not applicable to the Proposed Project. Major use permit applications must be accompanied by will-serve letters from water purveyors (i.e., PDS Form 399W) and must be sufficient to demonstrate that there is an adequate water supply to serve the project. Without such documentation, permit applications would not be approved and the project not constructed.

The Proposed Project's consistency with environmental goals and policies of County planning regulations is discussed in Section 2.5, Land Use. Please refer to this section for further details.



The following analysis focuses on whether there are sufficient water resources within the southeast County area necessary to serve the Proposed Project.

### Analysis

Per California Water Code Section 10912(a)(5)(B), a “proposed photovoltaic or wind energy generation facility approved on or after the effective date of the amendments made to this section at the 2011-12 Regular Session is not a project if the facility would demand no more than 75 acre-feet of water annually.” This analysis assumes that to calculate the project’s total annual water demand two factors are used: (1) the total water used during construction amortized over a 20-year period, or total construction water used divided by 20; and (2) the total amount of water to be used annually during operations. This approach is consistent with standard Water Supply Assessment preparation practices and the intent of the statute, which is to identify water shortages over a period of time, not in any particular year.

Under this approach, none of the proposed solar farms meet the 75 acre-feet of annual water use threshold; and therefore, a formal Water Supply Assessment for the Proposed Project has not been prepared. Amortized over a 20-year period, the Tierra del Sol and Rugged solar farms would have an annualized water use of 8.2-6 and 11-12.4 acre-feet, respectively.<sup>1</sup> (Appendices 3.1.5-5 and 3.1.5-6). ~~As the plans for the LanEast and LanWest solar farms would have an annualized water use of roughly 3.3 acre-feet per year, based on a simple scaling by size to the Rugged Solar Farm<sup>2</sup> have not been developed to a project level of detail, no detailed water use estimates have been developed. Nonetheless, because both these projects would be smaller in size and electrical generation capacity compared to the proposed Rugged solar farm, there is no reason to expect that their annualized water use would be any higher than 11 acre feet. The annualized water use of all four proposed solar farms (i.e., 25.6 acre-feet per year) would not come close to the 75 acre-feet threshold for preparation of a Water Supply Assessment.~~

### Tierra del Sol

Water for operation and maintenance of the proposed Tierra del Sol solar farm would be supplied by an on-site production well (Well B). According to the groundwater resources investigation report prepared for Tierra del Sol (Appendix 3.1.5-5), the production capacity of the well is sufficient to meet its long-term O&M needs. During operation, water demand would be limited to CPV panel washing, potable supply, landscape irrigation, and yearly application of a soil binding agent. The annual operational water use is estimated to be approximately 6 acre-

<sup>1</sup> Formula using values in Tables 1-6 and 1-7: (Year 1 Demand + [Operational Demand x 29]) / 20

<sup>2</sup> The LanEast and LanWest solar farms have not been developed to a project level of detail, so no detailed water use estimates have been developed.

feet per year (AFY) (rounded). Thus, the question of whether water supplies are sufficient to meet demand is limited to the construction-phase of the project.

The total water demand for construction of Tierra del Sol solar farm is expected to be ~~46.4~~21.9 million gallons, or about ~~50–68~~ acre-feet (Appendix 3.1.5-5 Table 1-6). Peak construction demand would occur during clearing, grubbing, and grading of the Tierra del Sol site. During this time, the ~~daily~~ estimated water demand would ~~range from 76,000 gallons per day (gpd) to 272,000 gpd~~ be approximately 50 acre-feet over the first ~~50–60~~ days of project construction (Appendix 3.1.5-5) to ~~272,000 gpd~~. One of the conditions of the ~~Master~~Major Use Permit to be required by the County is that the on-site well (Well B) will not be permitted to produce more than 18 acre-feet of water over the year-long construction period, with an additional limit of no more than 7 acre-feet over the first 90 days of construction which includes the 60-day (i.e., the period of peak demand). This condition is intended to ensure that the on-site well does not interfere with off-site wells. ~~The remaining construction water demand~~ Given the on-site well will be limited to 18 acre-feet, an additional 50 acre-feet of water would be imported from off site (43 acre-feet of which will be during the 60-day period of peak demand). Up to 21 acre-feet would be supplied by the Jacumba Community Services District (JCSD) and, if necessary, up to 29 acre-feet would be supplied by the Padre Dam Municipal Water District (Appendix 3.1.5-5). As indicated above, this use of off-site water would be limited to the construction period only because the on-site well (Well B) would have sufficient capacity to provide O&M water to the solar farm following construction.

The JCSD operates several water supply wells that serve approximately 561 residents or 294 total housing units and several commercial entities. When initially developed, JCSD Well 6 was intended for use as a potable water well; however, during drilling, a hot spring aquifer was encountered. Due to elevated temperature and fluoride, the water is limited to non-potable use. Water quality testing has confirmed that it is suitable for the purposes of dust control and to obtain optimum soil moisture for compaction during grading (~~Dudek 2013b~~Appendix 3.1.5-8). The JCSD intends to provide water to supplement on-site water production from Well B during Project construction demands. Originally, the short-term water demand from JCSD Well 6 for the Tierra del Sol Solar Farm ~~construction~~ construction, as evaluated in Appendix 3.1.5-8, ~~is~~ was expected to be up to 10.4 million gallons, or 32 acre-feet over an approximate 130 day period (~~Dudek 2013a~~). However, only 21 acre-feet of water would be utilized (14 acre-feet in the first 60 days, and 7 acre-feet thereafter) because most of the demand is during the 60-day peak construction period and because JCSD has indicated it would provide a maximum of 80,000 gallons per day; see Chapter 9.0, Table 9-3a, Response to Comments, for further details. A Groundwater Monitoring and Mitigation Plan (GMMP) will behas been prepared for JCSD Well No. 6, which details establishment of groundwater thresholds for off-site well interference and groundwater dependent habitat. Although groundwater investigation of the well has shown that

well interference and groundwater in storage impacts are not expected to be significant, the GMMP would ensure that any unanticipated impacts to groundwater storage, well interference, and/or groundwater dependent habitat are detected and reversed through curtailment or cessation of pumping (Appendix 3.1.5-8Dudek 2013a).

Based on the estimated off-site import requirements for construction of the Tierra del Sol Solar Farm, the evaluation of the JCSD Well No. 6 did not include sufficient water for the initial 60-day period of peak demand. As such,

The applicant has identified the remainder will be obtained from the Padre Dam Municipal Water District (PDMWD) as a source of recycled water to supply up to 29 acre-feet of water for the short-term needs of the project ~~in the event more proximal sources of water become unavailable (for example, if water level monitoring indicates local groundwater pumping needs to be curtailed or ceased in accordance with the GMMP)~~. Potable water cannot be sold to any entity located outside of the water service provider's service boundaries, per the San Diego County Water Authority and the Regional Water Quality Control Board's requirements. However, PDMWD is permitted to provide non-potable recycled water to construction projects (including for use in dust control and grading). It is covered under specific waste discharge requirements issued by RWQCB (Order No. 97-49, Waste Discharge Requirements and Water Reclamation Requirements for the Production and Purveyance of Recycled Water for Padre Dam Municipal Water District, San Diego County).

Because the applicant has identified viable sources of water to supply both its construction and operational needs, ~~including a back-up plan~~ (i.e., recycled water from Padre Dam) the Tierra del Sol solar farm's impact on water supplies and systems is **less than significant**.

Refer to Section 2.2, Air Quality, and Section 3.1.8, Transportation and Traffic, for analysis of potential impacts associated with transportation of water during construction.

### Rugged

Water for operation and maintenance of the proposed Rugged solar farm would be supplied by three on-site production wells (Well 6a, Well 6b, and Well 8). Existing use of Well 6a is 6,600 gpd for operations at Rough Acres Ranch. Additionally, construction of the Tule Wind Project O&M is estimated to use 2,500 gpd from Well 6a will require a total of 56 acre-feet of water over the year-long construction period ~~starting in December 2014~~. The water demands for the Tule Wind Project are expected to be supplied by Well 6a/6b and Well 8, ~~and are expected to peak early in the year, and prior to the peak demands of the Rugged Solar Farm (to begin in August 2015)~~. On December 18, 2014, the BLM approved an amendment to Tule Wind LLC's Right of Way (ROW) granting Tule Wind LLC a one-year extension on the deadline for submitting a NTP. The amended ROW requires Tule Wind LLC to obtain a NTP from BLM by December

~~31, 2015, and construction must begin within 90 days of issuance of the NTP, or by March 31, 2016. It is also possible that Assuming that the Tule Wind Project will not begin construction until in March 2016, the peak water demands of the Rugged Solar Farm (to begin in August 2015 and last 60 days) will not overlap with construction of Tule Wind. It is also possible that the Tule Wind Project will not begin construction until 2017 if the BLM approves Tule Wind LLC's request for an extension, although the Tule gen-tie from the Rugged interconnection to the Rebuilt Boulevard Substation will be constructed before the Rugged solar farm becomes operational. If that occurs, construction of the Tule Wind project will not overlap with the construction of the Rugged solar farm.~~ Considering existing use of Well 6a for the Rough Acres Ranch and possible future increase from its proposed Campground Facility and O&M needs for the Tule Wind roject, which is expected to be built by the time Rugged begins construction, it is estimated that approximately ~~17354~~ acre-feet, ~~780~~ gpd would be available from the three wells for construction-related use.

According to the groundwater resources investigation report prepared for the Rugged solar farm (Appendix 3.1.5-6), the production capacity of the wells are sufficient to meet its long-term O&M requirements. During operation, as with Tierra del Sol, water demand would be limited to CPV panel washing, potable supply, landscape irrigation, and yearly application of a soil binding agent. The annual operational water use is estimated to be approximately 8.7 AFY. Thus, this potential impact is limited to the construction-phase of the solar farm (note that the cumulative impact analysis below in Section 3.1.9.4 addressed the long-term increase in demand on Well 6a due to the proposed Rough Acres Foundation Campground Facility).

The total water demand for the entire construction phase of the Rugged solar farm is expected to be ~~19.427.0~~ million gallons, or ~~59-83~~ acre-feet (Appendix 3.1.5 Table 1-6). Peak construction demand would occur during clearing, grubbing, and grading of the Rugged site. ~~During this time, the daily estimated water demand would range from 192,000 gpd to 296,000 gpd.~~ Given the existing and planned uses of Well 6a, the available on-site wells are expected to be capable of providing up to ~~544~~ acre-feet of groundwater for construction of the Rugged solar farm. This consists of up to 35 acre-feet in the first 60 days, and 19 acre-feet for the remainder of the construction period. The available water from on-site wells is sufficient to supply most of the water demand during the peak construction period, and all of the water demand thereafter. The remaining construction water demand (about 29 acre-feet) would be limited to the peak construction period and would be and would be supplied by the JCSD, and Pine Valley Mutual Water Company (PVMWC), and if necessary the PDMWD (Appendix 3.1.5-56). The PDMWD is available as a back-up source of water in the event that water from PVMWC or JCSD become unavailable for any reason.

JCSD is expected to provide for up to ~~5.2 million gallons, or 16-14~~ acre-feet from JCSD Well 6 over an approximate ~~6560~~-day period to supply the expected shortfall from the solar farm's on-

site wells. As described above for the Tierra del Sol solar farm, a groundwater investigation of JCSD's proposed well pumping has indicated that the water could be provided without causing significant impacts on groundwater in storage or well interference. Performance standards contained within both the Groundwater Ordinance and the County Guidelines require groundwater use to be less than significant. The GMMP specific to JCSD Well 6 would ensure that any unanticipated impacts to groundwater storage, well interference, and groundwater-dependent habitat are detected and reversed through curtailment or cessation of pumping (Appendix 3.1.5-8~~Dudek 2013a~~).

The PVMWC could also supply up to 16 acre-feet of water during the peak construction period to cover the expected shortfall of the on-site wells. PVMWC owns and operates 10 water supply wells that serve approximately 675 residences and 20 commercial entities in and around Pine Valley, California. The average production volume from the PVMWC wells between 1999 and 2012 was 270 AFY (Appendix 3.1.5-7~~Dudek 2013b~~). Production from the well field peaked in 2007 at 319 acre-feet and has been below 250 AFY since 2010. The PVMWC has agreed to dedicate one of its water supply wells (Well No. 5) to the Rugged solar farm for the 60-day peak construction period, and anticipates being able to supply up to 16 acre-feet during the peak construction period. Historical production from Well No. 5 has ranged from 0.5 to 22.7 AFY. Production at these rates between the year 2000 and the present has not resulted in adverse impacts to the amount of groundwater in storage or caused off-site well interference. Well No. 5 is presently not used or certified as a potable water source by PVMWC, but it is suitable for use for construction activities such as dust control and to obtain optimum soil moisture for compaction during grading (~~Dudek 2013b~~Appendix 3.1.5-7). A groundwater investigation of the well found that PVMWC can supply 16 acre feet of groundwater for construction-related use of the project without exceeding significance thresholds for groundwater in storage or well interference (Appendix 3.1.5-7~~Dudek 2013b~~). In addition, the GMMP specific to PVMWC Well No.5 would ensure that any unanticipated impacts to groundwater storage, well interference, and groundwater habitat are detected and reversed through curtailment or cessation of pumping.

As described above for the Tierra del Sol solar farm, PDMWD would be used as a source of recycled water to supply the short-term needs of the project in the event more proximal sources of water become unavailable. Between the available sources at JCSD and PVMWC, there is currently a 1-acre surplus of water that would be available to supply the peak construction-related demands of the Rugged Solar Farm in the first 60 days of construction. For the entire construction phase there is a surplus of 14 acre-feet of water available from the off-site sources at JCSD and PVMWC. For the same reasons as described above for the Tierra del Sol solar farm, the Rugged solar farm's impact on water supplies and systems is **less than significant**.

Refer to Section 2.2, Air Quality, and Section 3.1.8, Transportation and Traffic, for analysis of potential impacts associated with transportation of water during construction.

### LanEast and LanWest

Because sufficient project-level data, such as site design, construction schedule, and the construction equipment fleet, have not been developed for LanEast and LanWest, site-specific water demands and sources of groundwater cannot be identified at this time. However, groundwater demands were generally estimated based on the combined size and electrical production capacity of the two proposed solar farms as compared to Tierra del Sol and Rugged. During operation, as with Tierra del Sol and Rugged, water demand would be limited to CPV panel washing, potable supply, and yearly application of a soil binding agent. The annual operational water use is estimated to be approximately ~~2~~3.3 AFY. The LanEast and LanWest sites have a total of nine wells installed. The wells are associated with residential and agricultural activities that occur on the site. Currently, three wells are used for potable supply for the three residential structures on the property. An additional well is used as a source of water supply for livestock that graze the site. No well testing has been conducted on the sites, but based on the number of wells and knowledge of the hydrogeologic units underlying the sites, it is estimated that the wells would together have a production capacity of approximately 50 gpm; it is conservatively assumed that 25% of the maximum capacity, or 12.5 gpm, could be sustainably pumped.

The total estimated construction-related water need of the LanEast and LanWest solar farms would be ~~7,357,000~~10.1 million gallons, or ~~23~~31 acre-feet (rounded). Peak-construction demand would occur during clearing, grubbing, and grading of the LanEast and LanWest sites. The construction water demand that would not be met by existing wells would be supplied by off-site groundwater or municipal sources, in a similar manner described above for Tierra del Sol and Rugged. Since the LanWest and LanEast solar farms would begin construction sometime after completion of the Tierra del Sol and Rugged solar farms and would require less than half of the construction water demand as either Tierra del Sol or Rugged, it is anticipated adequate water resources would be available during construction. Regarding O&M, the 12.5 gpm (approximately 20 AFY) conservatively estimated sustainable pumping rate would adequately supply the estimated operational water use demand of 3.3 AFY.

For these reasons, sufficient water supplies could be available to meet the needs of the solar farm during both construction and O&M. If the yield from the on-site wells were to be insufficient to supply the construction-related needs of the project, the applicant would need to secure agreements with off-site water purveyors to obtain sufficient water for construction. Similar to the Tierra del Sol and Rugged solar farms, no new water or wastewater treatment facilities, or expanded entitlements would be needed. Therefore, the LanEast and LanWest solar farms' impact on water supplies and systems is **less than significant**.

Refer to Section 2.2, Air Quality, and Section 3.1.8, Transportation and Traffic, for analysis of potential impacts associated with transportation of water during construction.

### Proposed Project

As demonstrated in project-specific groundwater resource investigation reports (Appendices 3.1.5-5 and 3.1.5-6), as well as an analysis of groundwater impacts of off-site sources of import water the applicant has identified (Appendices 3.1.5-7 and 3.1.5-8~~Dudek 2013a, Dudek 2013b~~), sufficient water supplies would be available to meet peak construction-related demands of the Proposed Project. The potential shortfall from JSCD Well 6 for the peak construction water demands of the Tierra del Sol site would be imported from the PDMWD. The impact would therefore be **less than significant**. A-GMMPs would be implemented to ensure that short term pumping from the proposed off-site supply wells at JCSO (Well No. 6) and PVMWC (Well No. 5) would not result in significant impacts on groundwater in storage, well interference, or groundwater-dependent habitat.

#### **3.1.9.3.2 Wastewater Treatment**

##### Guidelines for the Determination of Significance

The County's Guidelines for Determining Significance do not include significance thresholds or guidance for determining significance for impacts to utilities and service systems. Therefore, for the purpose of this EIR, Appendix G of the CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if the project would:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)
- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Guidelines B and C do not apply because the project would use an on-site septic system and would not connect to a new or existing wastewater treatment facility; therefore, they are not addressed below.

### Analysis

#### Tierra del Sol

The Tierra del Sol solar farm would include a private on-site septic system that would be comprised of a septic field with approximately 300 feet of septic leach line, an equal size reserve area, and a 1,000-gallon septic tank. The septic system would be located near the O&M building and would be for the sole use of six to seven full-time staff and activities on the site. Wastewater generated on the site is expected to be minimal. There would be no need for a wastewater treatment provider to serve the project and no need to expand wastewater treatment systems off the site. As discussed in the Regulatory Setting, the project applicant would be required to obtain a permit to install and operate the septic system from the County DEH prior to construction and would be required to comply with the San Diego County Code of Regulatory Ordinances, Title 6, Division 8, Chapter 3, On-Site Wastewater Treatment Systems and Improper Disposal of Sewage (Sections 68.301 through 68.361 of the County Code of Regulatory Ordinances). With DEH review and oversight that would ensure adherence to all applicable laws and regulations, installation, operation, and decommissioning of the on-site septic system would not violate any wastewater treatment requirements of the applicable RWQCB. Therefore, impacts would be **less than significant**.

The gen-tie line would not include a component that would generate wastewater. No impacts related to wastewater would occur from the gen-tie line.

#### Rugged

Similar to the Tierra del Sol solar farm, the Rugged solar farm would include an on-site private septic system to treat wastewater from the O&M facility. Wastewater generated on the site is expected to be minimal and would not require connection to a wastewater treatment provider to serve the project. The on-site private septic system serving the O&M building would be sized to serve approximately 15 to 20 full-time staff. With DEH review and oversight, installation, operation, and decommissioning of the on-site septic system would not violate any wastewater treatment requirements of the applicable RWQCB. Therefore, impacts would be **less than significant**.

#### LanEast

Similar to the Tierra del Sol solar farm, the LanEast solar farm would include an on-site private septic system to treat wastewater from the O&M facility, which is expected to house



approximately two to four full time employees. Wastewater generated on the site is expected to be minimal and would not require connection to a wastewater treatment provider to serve the project. With DEH review and oversight, installation, operation, and decommissioning of the on-site septic system would not violate any wastewater treatment requirements of the applicable RWQCB. Therefore, impacts would be **less than significant**.

#### LanWest

Similar to the Tierra del Sol solar farm, the LanWest solar farm would include an on-site private septic system to treat wastewater from the O&M facility, which is expected to house approximately two to four full time employees. Wastewater generated on the site is expected to be minimal and would not require connection to a wastewater treatment provider to serve the project. With DEH review and oversight, installation, operation, and decommissioning of the on-site septic system would not violate any wastewater treatment requirements of the applicable RWQCB. Therefore, impacts would be **less than significant**.

#### Proposed Project

Each of the proposed solar farm sites would include an on-site private septic system to treat wastewater from the O&M facilities. Wastewater generated on the sites is expected to be minimal and would not require connection to a wastewater treatment provider. With DEH review and oversight, installation, operation, and decommissioning of the on-site septic systems would not violate any wastewater treatment requirements of the applicable RWQCB. Therefore, impacts would be **less than significant**.

#### **3.1.9.3.3 Solid Waste**

##### Guidelines for the Determination of Significance

The County's Guidelines for Determining Significance do not include significance thresholds or guidance for determining significance for impacts to utilities and service systems. Therefore, for the purpose of this EIR, Appendix G of the CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would not result if the project were to:

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs
- Comply with federal, state, and local statutes and regulations related to solid waste.

### Analysis

#### Tierra del Sol

Wastes generated by construction of the Tierra del Sol solar farm would primarily consist of concrete, wood, and scrap metal that would be collected for recycling on the site to the extent possible, and would be sent to off-site recycling facilities where feasible. Total construction waste sent to local landfills is not anticipated to be substantial. Construction wastes could be dispersed among the landfills nearest to the project area, which have sufficient remaining capacity to meet existing solid waste demands in addition to the waste from construction of the Tierra del Sol solar farm (see discussion above under 3.1.9.1.21). Minimal wastes would be generated during operation of the solar farm, which would include typical office waste from activities at the O&M facility and, periodically, packaging wastes from solar farm equipment and supplies. O&M generated wastes would be recycled to the extent possible and are not anticipated to impact local landfill capacities. During decommissioning of the gen-tie line, construction wastes would be similar to those generated during construction and would also be recycled to the extent possible. Though exact landfill capacities at the time of decommissioning cannot be known at this time, it is currently anticipated that approximately 98% of the materials that make up each CPV system, or 7.306 kg of a combination of aluminum, glass, steel, copper, and concrete, would be recyclable (Soitec 2013). Approximately 0.122 kilogram (kg) of the remaining materials of each CPV tracker, or approximately 324.2 kg of solid waste would be sent to a landfill during decommissioning, in addition to solid waste generated during the decommissioning of the associated O&M building, collection system, collector substation, and the gen-tie line. Based on the requirement of the Integrated Waste Management Act that the County provide for sufficient solid waste capacity in its landfills for a 15-year period (to be periodically updated), it is anticipated that the local landfills would have capacity to accept the waste from decommissioning activities. Total waste sent to local landfills during construction, operation, and decommissioning of the Tierra del Sol solar farm is not anticipated to be substantial.

Construction of the gen-tie would similarly result in concrete, wood, and metal waste that would be recycled on site or off site to the extent possible. Total construction wastes to be sent to a local landfill would be minimal and would not significantly affect the capacity of local landfills. The gen-tie line would not generate solid waste during operations. During decommissioning of the gen-tie line, construction wastes would be similar to those generated during construction and would also be recycled to the extent possible. Total waste sent to local landfills during construction, operation, and decommissioning of the gen-tie line is not anticipated to be substantial.

Overall, for the reasons stated above, impacts to local solid waste collection, transfer, and disposal capacities as a result of the Tierra del Sol solar farm project would be **less than significant**.

### Rugged

Wastes generated during construction, operation, and decommissioning of the Rugged solar farm would be similar to those discussed above for the Tierra del Sol solar farm and would also be recycled to the extent possible. Total waste sent to local landfills during construction, operation, and decommissioning is not anticipated to be substantial. Impacts to local solid waste collection, transfer, and disposal capacities would be **less than significant**.

### LanEast

Wastes generated during construction, operation, and decommissioning of the LanEast solar farm would be similar to those discussed above for the Tierra del Sol solar farm and would also be recycled to the extent possible. Total waste sent to local landfills during construction, operation, and decommissioning is not anticipated to be substantial. Impacts to local solid waste collection, transfer, and disposal capacities would be **less than significant**.

### LanWest

Wastes generated during construction, operation, and decommissioning of the LanWest solar farm would be similar to those discussed above for the Tierra del Sol solar farm and would also be recycled to the extent possible. Total waste sent to local landfills during construction, operation, and decommissioning is not anticipated to be substantial. Impacts to local solid waste collection, transfer, and disposal capacities would be **less than significant**.

### Proposed Project

As discussed above, wastes generated during construction, and decommissioning of the four solar farms would include concrete, wood, and scrap metal that would be recycled on the site to the extent possible and would be sent to off-site recycling facilities where feasible. As stated above, approximately 98% of the CPV trackers would be recyclable, and approximately 0.122 kg per tracker, or approximately 903.9 kg of solid waste would be sent to a local landfill during decommissioning. Wastes generated during operation of the solar farms would be minimal and would include typical office waste from the activities at the O&M facilities. Overall, total waste sent to local landfills during construction, and operation, and decommissioning of the four solar farm sites is not anticipated to be substantial, and based on the requirement of the Integrated Waste Management Act that the County provide for sufficient solid waste capacity in its landfills for a 15-year period (to be periodically updated), it is anticipated that the local landfills would have capacity to accept the waste from decommissioning activities. Impacts to local solid waste collection, transfer, and disposal capacities would be **less than significant**.

#### **3.1.9.4 Cumulative Impact Analysis**

The geographic extent for the analysis of cumulative impacts associated with utilities consists of southeastern San Diego County. This geographic extent is appropriate because utilities are provided by local jurisdictions or districts. Cumulative impact analysis for utilities has been conducted using the projects in Table 1-12, and Figure 1-12 in Chapter 1.0, Project Description.

Past development and population growth within southeastern San Diego has impacted the provision of public utilities. As the area becomes increasingly developed and the permanent population grows, increased demand is placed on the existing public utilities, which can become overwhelmed. As discussed above, southeastern San Diego consists of several small rural communities lacking municipal water and sewer utility systems that rely on groundwater for water supply and private septic systems for sewer. So while increased development and population growth can lead to additional funds available to provide additional public services to maintain service ratio standards, the lack of water and sewer infrastructure in the Proposed Project area severely limits the potential for utilities to be augmented by incremental increases in funding.

##### **3.1.9.4.1 Water**

As indicated in Project Description Table 1-12, several utility-scale renewable energy projects are proposed for southeast San Diego County, including wind and solar projects, and supporting infrastructure, such as transmission lines and electrical substations. With many of these projects expected to undergo construction in the next few years, the southeast County region will experience increasing demands on groundwater resources, associated in particular with the construction phase of these projects. Certain residential, commercial, and/or institutional projects seeking permits and approvals in the area could also contribute to long-term demands on groundwater resources. Because this area of the County is entirely groundwater-dependent, water systems are limited to private wells for domestic and agricultural purposes, and small community water systems that serve a limited number of customers. The Proposed Projects would not require or result in the construction of new off-site water or wastewater treatment facilities because projects would need to be served by on-site water wells or small water systems (i.e., the area is not served by municipal water districts with large water/wastewater facilities).

The cumulative impact described here relates to the potential for there to be insufficient water resources available from the groundwater basin to serve the development projects in the cumulative scenario. As the subject groundwater basin is not currently in overdraft or adjudicated, the question of entitlements is not applicable to the Proposed Project or other projects in the cumulative scenario. However, under County ordinances and policies, proposed developments in the area—even those that would not require a Water Supply Assessment per California Water

Code Section 10912(a)(5)(B)—are required to demonstrate a viable source of water supply in order to obtain the permits and approvals required to begin construction. General Plan policies include:

- **County General Plan Policy LA-13.1: Adequacy of Water Supply.** Coordinate water infrastructure planning with land use planning to maintain an acceptable availability of a high quality sustainable water supply. Ensure that new development includes both indoor and outdoor water conservation measures to reduce demand.
- **County General Plan Policy LA-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.
- **Boulevard Subregional Plan Policy CM 8.1.1:** Prohibit development and the exportation or sale of groundwater that would adversely impact the ground and surface water resources.
- **Boulevard Subregional Plan 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.

It is also important to note that the County's Guidelines for impacts to groundwater resources include a requirement to assume maximum buildout of the General Plan within the study area when performing water balance analyses. This means that every discretionary project subject to CEQA with potential impacts to groundwater is evaluated in a cumulative context. Conclusions on a project's impacts to groundwater in storage therefore, can be extended to the cumulative scenario.

The General Plan, however, did not contemplate the construction of multiple renewable energy projects in the area because the southeastern portion of the County is predominantly zoned for agricultural, ranching, and low-density residential uses. Although the long-term operational water demands of these projects are roughly comparable to the water use that would occur under agricultural and/or rural residential uses, the construction-related water demands are unusually high, even if brief, and some of the projects proposed have overlapping construction schedules. For this reason, this analysis focuses on the construction demands of projects in the cumulative scenario.

The geographic scope used to identify projects listed in the Project Description (Table 1-12) that could contribute to cumulative demands on regional groundwater sources was broadly defined as the southeast San Diego County area. The water-intensive use period for the Proposed Project is limited to the construction phase of each of the solar farms; therefore, the temporal scope of analysis is limited to the approximately 2-year period beginning in July 2014, when one or more of the proposed solar farms would be under construction.

Based on the above criteria, the projects in Table 3.1.9-1 were identified for analysis of cumulative water demand. Cumulative projects include the Rough Acres Foundation Campground Facility, the Tule Wind project, the ECO Substation project (which includes the Rebuilt Boulevard Substation as part of the project) and the Energia Sierra Juarez U.S. Transmission Line project. The ECO Substation project is currently under construction, and the substation sites, which represent nearly all of the water demand for the project, are anticipated to be fully constructed before any portion of the Proposed Project commences operation. ~~Based on the construction schedules and water demands of each of the projects, the month with the highest rate of water use would be October 2014, during the peak construction period of the Tierra del Sol solar farm and the Tule Wind project. During the month of October 2014, the cumulative water demand is expected to be approximately 45 acre-feet. By the end of 2015, it is estimated that construction of all the projects combined during the 2-year period will require a total of 504 274 acre-feet, as shown in Table 3.1.9-1.~~

As indicated in Section 3.1.9.3, the Proposed Project has secured water to serve its construction related needs, and investigation has been completed to ensure impacts from using the wells at JCSD and PVMWC would be less than significant. Other projects in the cumulative scenario would be required to demonstrate their sources of water supply in a similar manner. If on-site wells provide insufficient yields to supply the construction-related demands of a project, the project proponent would be required to secure agreements with local water purveyors, or SDCWA member agencies (such as the PDMWD), to provide non-potable water suitable for construction and, if from a recycled water source, compliant with Title 22 standards. Thus, even if on-site or local sources of water are unavailable or being used to serve another project, the projects listed in the cumulative scenario would have the option to import water from PDMWD or other municipal sources to serve construction-related needs, as indicated in Section 3.1.9.3. ~~Although short term construction related demands on groundwater will be high when considering all projects in the cumulative scenario, the available information suggests there is enough local groundwater available to meet the short term demand. In addition, project developers would have the option to import non-potable water suitable for construction purposes from further away (such as the San Diego County Water Authority Member Agencies). For the above reasons, Therefore,~~ the Proposed Project **would not contribute to a cumulatively considerable impact.**

#### **3.1.9.4.2 Wastewater Treatment**

As discussed above, the Proposed Project would include on-site private septic systems to treat wastewater from the O&M facilities. Wastewater generated on the site is expected to be minimal and would not require connection to a wastewater treatment provider to serve the project. With DEH review and oversight, installation, operation, and decommissioning of the on-site septic systems is not expected to violate any wastewater treatment requirements of the applicable

RWQCB. Since each site would have a self-contained septic system to treat minimal amounts of wastewater generated at the sites, the Proposed Project would not generate wastewater which would be treated by a wastewater treatment provider. Therefore, the Proposed Project **would not contribute to a cumulatively considerable impact** relative to wastewater treatment systems.

#### **3.1.9.4.3 Solid Waste**

As discussed above, construction of the Proposed Project would generate construction wastes that would be recycled to the extent possible. The waste generated by construction that would be sent to local landfills is not anticipated to overwhelm the remaining capacity of local landfill facilities such that these facilities would not be able to serve existing demand. Wastes generated during operations would consist primarily of typical office waste from activities at the O&M facility and, periodically, packaging wastes from solar farm equipment and supplies. Area landfills have sufficient capacity to accommodate the minor volume of waste expected to be generated during operation of the Proposed Project. Therefore, the Proposed Project **would not contribute to a cumulatively considerable impact**.

Although exact volumes are unknown, construction of reasonably foreseeable projects in the area would generate wastes which would be transported to a landfill for disposal. The same landfills used during construction and operation of the Proposed Project would likely be used by waste haulers to dispose of wastes generated in the project area by reasonably foreseeable cumulative projects. However, due to the temporary nature of construction and due to the remaining capacities of area landfills as discussed above (the Sycamore and Otay Landfills have a combined remaining capacity of over 71 million cubic yards (CalRecycle ~~2012a~~–2014 and CalRecycle ~~2012b~~2012a), and because construction of all reasonably foreseeable cumulative projects would not necessarily occur concurrently with the construction of the Proposed Project, local and regional landfills and waste haulers are anticipated to have sufficient remaining capacity to serve all reasonably foreseeable cumulative projects. Therefore, the Proposed Project **would not contribute to a cumulatively considerable impact** relative to solid waste collection, transfer, and disposal capacities during construction.

#### **3.1.9.5 Conclusion**

The Proposed Project would not result in impacts to utilities and service systems, including water, wastewater, and solid waste hauling and disposal, and no mitigation measures would be necessary.

**Table 3.1.9-1  
Construction-Related Water Demands by Project**

Project	Start Date*	Duration	Peak Demand Period		Total Construction Demand	
			Approximate Rate of Water Use (gpd**) Peak Demand	Duration	Gallons (rounded to the thousands)(thousands)	Acre-Feet (rounded to the tenths)
Tierra del Sol Solar Farm	October 2014-2015	1 Year	50 af 76,000–272,000	50-60 Days	21,920,000	16,133
Rugged Solar Farm	August 2014-2015	1 Year	64 af 192,000–296,000	60 Days	27,043,000	19,364
LanEast and LanWest Solar Farms <sup>1</sup>	November 2015-2016	8 Months	--	--	10,103,926	7,157
<i>Subtotal</i>					<u>59,066,926</u>	<u>42,854</u>
Rough Acres Foundation Campground Facility <sup>2</sup>	January 2015 <sup>***</sup>	5 years	--	--	10,580,000	32.5
Tule Wind Project	<del>September</del> <del>December</del> March 2016 <sup>4</sup>	9 Months	120,00–235,000 gpd	72 Days	18,940,000	58
ECO Substation Project	January 2013 (construction commenced)	2 years	--	--	90,000	276
Energia Sierra Juarez U.S. Transmission Line Project <sup>3</sup>	--	6 months	--	--	780,000	2.4
<i>Subtotal</i>					<u>42030,300,000</u>	<u>36993</u>
<b>Total</b>					<b><u>16389,151367,000</u></b>	<b><u>504274</u></b>

**Notes:**

\* Start dates are approximate and based on the information available to-date. Schedules are subject to change.

\*\* gpd = gallons per day

\*\*\* As of January 21, 2015, environmental review for the Rough Acres Foundation Campground Facility is still in process and a Major Use Permit has not been obtained. There is currently no timeline available for when the project would be brought to hearing or obtain necessary approvals and permits.

<sup>1</sup> Project-specific estimates of construction-related water demands for the LanEast and LanWest solar farms have not been developed. These are estimates based on the size of the project relative to the Rugged site.

<sup>2</sup> The total construction demand is limited to the 2014–2015 time period.

<sup>3</sup> It was assumed that the ESJ U.S. Transmission Line project would commence along with the ECO Substation project.

-- Information unavailable. Lacking specific detail on peak demands, the total construction demand was assumed to be evenly distributed across the construction period.



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