3.14. UTILITIES AND SERVICE SYSTEMS

3.14.1. ENVIRONMENTAL SETTING

Westlands Solar Park

Water Supply

Agricultural water supply for crop irrigation within the WSP plan area is mainly provided from surface water deliveries provided through the Westlands Water District. Surface supplies are augmented by groundwater pumping from agricultural wells located throughout the plan area. These water supplies consist of untreated non-potable water intended solely for application to crops. There are no sources of potable domestic water within the WSP plan area.

Surface Water Deliveries

The WSP plan area lies entirely within the boundaries of the Westlands Water District. WWD was formed in 1952 to serve agricultural water users on the west side of the San Joaquin Valley, and has a service area of 610,000 acres (960 square miles). WWD comprises 87 percent of the San Luis Unit service area of the federal Central Valley Project (CVP). In 1968, the WWD began receiving deliveries of CVP water from the U.S. Bureau of Reclamation via the San Luis Canal, the federally-constructed section of the California Aqueduct between San Luis Reservoir and Kettleman City. Under its current contract with the USBR, the Westlands Water District is entitled to receive 1.197 million acre-feet (af) of surface water delivery during years when 100 percent of this "Contract" water is available. (Note: Under the terms of a 2015 settlement agreement with the U.S. Department of Justice, the CVP surface water deliveries to Westlands will be capped at 895,000 acre-feet per year.) Surface water for the WSP plan area is conveyed by a series of lateral pipes extending eastward from the San Luis Canal to metered valves located throughout the plan area.

The west side of the San Joaquin Valley was among the last areas in the Central Valley to receive imported water from the Delta. The San Luis Unit was constructed to deliver "surplus Delta water," since the existing water users elsewhere in the State either had senior water rights or had a higher priority in the queue to receive Contract water from the federal CVP or the State Water Project. The water contractors located south of the Delta generally have lower priority for Contract water, and these contractors suffer disproportionately during drought conditions when water deliveries are curtailed. Between 2006 and 2015, WWD has received its full 100 percent contract entitlement in only one year - 2006. In 8 of those 10 years, WWD received water allocations that were 50 percent or less than its Contract entitlement. The average annual water allocation received during that 10-year period was about 460,000 acre-feet, or 38.5 percent of the contract entitlement (WWD 2017). This represents 31 percent of the total irrigation water requirement (i.e., 1.5 million acre-feet) in the District. In 2014 and 2015, the WWD water allocation was 0 percent, and in 2016 it was 5 percent. (In 2017, the WWD is anticipated to receive 100 percent of its contract water allocation after the above normal rainfall year.) The curtailment of surface water deliveries is experienced equally by all of WWD's contractors, including

the growers within the WSP site. Under the terms of a 2015 settlement agreement with the U.S. Department of Justice, the CVP surface water deliveries to Westlands will be capped at 895,000 acre-feet per year (USBR 2015).

Groundwater Supply

Given the chronic shortage of surface water supplies, growers within the WWD service area must augment surface water deliveries with pumped groundwater to meet crop irrigation needs. Since 1988, groundwater withdrawals within WWD have averaged about 273,000 acre-feet per year (afy), or about 0.48 acre-feet per irrigable acre (WWD 2017). However, the volume of groundwater pumping varies substantially from year to year depending on availability of CVP surface water deliveries. For example, in 2006 and 2017, the latest years WWD received 100 percent of its CVP water allocation, the annual volume of groundwater pumped averaged 28,500 acre-feet over the two years, representing a small portion of overall annual irrigation requirement of about 1.5 million acre-feet District-wide. During years of severe drought, like the recent drought of 2012 through 2016, groundwater pumping increases. to make up for shortfalls of surface water deliveries. During those five drought years, WWD growers received an average of 13 percent of CVP surface water deliveries, and total groundwater pumping within the District averaged 586,000 acre-feet per year, or slightly more than 1.0 acre-foot per irrigable acre. From 2012 to 2014, the groundwater elevations in the lower (sub-Corcoran) aquifer dropped by as much as 400 feet (WWD 2013, 2015, 2016, 2017; DWR 2003).

Groundwater Quality

Salts and Selenium

As discussed in Section *3.2. Agricultural Resources*, the soils within the WSP plan area contain high levels of naturally-occurring salts and other minerals such as selenium. Imported surface water deliveries also include low concentrations of salt. When near-surface water evaporates or is transpired through crops, the precipitated salts are left behind, resulting in increased salinity in the surface soils. To reduce salt concentrations in the near-surface soil, imported water is used to flush excess salts downward prior to planting. This flushing practice, followed by the application of irrigation water to planted crops, has resulted in large downward head gradients (i.e., downward pressure on percolating groundwater). As a result, some of the salts and selenium in the near surface soils are leaching deep into the alluvium and increasing the salt and selenium concentrations in the lower aquifer, which is used for drinking water and irrigation water. Although the lower aquifers are hundreds of feet below the surface, the poor quality groundwater is moving downward in response to recharge by irrigation from above the water table and by removal of groundwater via wells screened in the lower aquifer. Given the downward flow rate of saline water, it has been estimated that the usable average life of the aquifer in Westlands is from 110 to 114 years, assuming continuation of current farming practices (USBR 2006, p. 6-2).

Nitrates

Contamination of groundwater from nitrate loading is a significant threat to drinking water quality in the eastern portions of the south San Joaquin Valley. The primary sources of well water contamination are agricultural fertilizers, wastewater from dairy operations, and individual septic systems. A nitrate contamination study of the southern San Joaquin and Salinas Valleys was prepared by UC Davis for the State Water Resources Control Board in January 2012 (UCD 2012). With respect to western Kings County and western Fresno County, the UC Davis study found that nitrate loading due to septic systems

was very low at 1 kilogram of nitrogen per hectare per year (kg N/ha/yr) or 0.9 lb per acre per year. The nitrate levels in wells were similarly low, with maximum levels found to be well below the State's Maximum Contaminant Level (MCL) of 45 milligrams per liter (mg/L) in almost all wells, with the exception of wells near four small communities in western Fresno County (Five Points, San Joaquin/Tranquillity, Mendota). Within the WSP plan area, the maximum nitrate concentrations in all wells were found to be less than 2.0 mg/L (UCD 2012, p. 39).

Wastewater Collection and Treatment

The WSP plan area is not within or near an area served by a community wastewater collection and treatment system. During construction of each WSP solar facility, the domestic wastewater generated by construction workers would be accommodated through the use of portable toilet facilities, with regular cleanout and disposal at an approved site. Upon completion, the operational wastewater disposal needs for each WSP solar generating facility would be provided by individual septic tanks which would be emptied as needed by septic tank pumping contractors. It is not expected that any WSP solar facilities would include onsite leachfields. If any individual septic tank and leachfield systems are proposed for WSP solar facilities, such systems would be designed and constructed to meet the requirements and standards of the Kings County Plumbing Code. (See Section *3.14.3. Regulatory Context* for a discussion of applicable Plumbing Code requirements.)

Solid Waste

Solid waste collection and disposal service in Kings County is provided by the Kings Waste and Recycling Authority (KWRA). The KWRA was formed in 1998 by agreement between Kings County and the cities of Lemoore, Hanford, and Corcoran. Solid waste from the member jurisdictions is transported to KWRA Materials Recovery Facility in Hanford where wastes are separated for recycling, composting, or landfill disposal. Commercial solid waste is collected by private contract with licensed haulers (Kings County 2010a). Used construction and demolition material is accepted at an approved facility in Hanford (CalRecycle 2016a).

Non-recyclable materials are transferred to the Chemical Waste Management Landfill (CWML) site on SR-41 in Kettleman Hills approximately 10 miles south of the WSP plan area. The CWML has a maximum disposal rate of 2,000 tons per day, and currently accepts an average of 1,350 tons per day. The total permitted capacity of CWML is 18.4 million cubic yards, with a currently remaining capacity of approximately 15.8 million cubic yards, as of January 2016. The facility's estimated closure year is 2030, with the actual closure date depending on the rate of fill (CalRecycle 2016c)(Waste Management 2016).

WSP Gen-Tie Corridors

Water Supply

The relatively small water demands during construction of the WSP gen-tie projects would be provided by agricultural wells or municipal sources within Kings and Fresno counties in the vicinity of the gen-tie lines.

Wastewater

Wastewater service during construction of the gen-tie projects would be provided by portable chemical toilets with disposal at approved facilities in the region. During operation, the gen-tie facilities would not require wastewater service.

Solid Waste

The small amounts of non-reusable and non-recyclable solid waste generated by the WSP gen-tie projects would be hauled to the nearest solid waste disposal facilities in each affected county. In Kings County, solid waste would be disposed of at the CWML facility in the Kettleman Hills, which has a remaining capacity of about 15.8 million cubic yards. In Fresno County, solid waste would be hauled to the American Avenue Landfill which has a remaining capacity of approximately 29 million cubic yards (CalRecycle 2016c).

3.14.2. REGULATORY CONTEXT

Federal

There are no federal laws, orders, regulations, or standards that are related to utilities and service systems for the WSP solar facilities.

State

Senate Bills 610 and 267 (Water Supply Assessments)

Enacted in 2001, SB 610 sets forth requirements for CEQA documents that address the adequacy of water supply for large plans and projects. Under SB 610, cities and counties must incorporate a Water Supply Assessment (WSA) into any CEQA document for development projects that consist of 500 or more residential units, or the equivalent (e.g., shopping center greater than 500,000 square feet). The WSA must cover a 20-year projection of water demands and supplies in normal, dry, and multiple dry years, including existing and future users. In 2011, SB 267 amended the definitions of projects subject to SB 610 to include solar PV and wind projects that have water demands of more than 75 acre-feet per year (California Water Code Section 90912(a)(5)(B)).

It is estimated that upon buildout of the WSP solar facilities, the total operational water demands within WSP will be approximately 270 afy. Since this exceeds that 75 afy threshold established in SB 267, a WSA was prepared in conjunction with this EIR. The WSA is incorporated into this EIR as Appendix F, and it findings and conclusions are summarized under Impact UTS-1 later in this section.

California Water Code

Section 13751 of the California Water Code requires a Report of Well Completion to be filed with the Department of Water Resources (DWR) within 60 days of well completion. New wells must comply with California Department of Water Resources Well Standards as described in Water Resources Bulletins 74-81 and 74-90.

California Integrated Waste Management Act

In 1989, the legislature enacted the Integrated Waste Management Act (AB 939), which required all California cities and counties to divert 50 percent of its solid waste from being disposed in landfills. In 2008, the legislature enacted SB 1016, which did not change the required 50 percent diversion rate, but altered the method of measuring compliance by implementing a simplified measure of local jurisdictions' performance. Under SB 1016, diversion is measured by per capita disposal rate, based on two factors: a jurisdiction's population and its disposal as reported by disposal facilities (CalRecycle 2012b). In 2006, the latest year for which diversion data is available from CalRecycle, the diversion rate for the Kings County was 48 percent (CalRecycle 2006).

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA). The goal of the legislation is to sustainably manage California's groundwater basins, identified as medium to critically over drafted subbasins. The SGMA required that all medium to critically over drafted subbasins identified by DWR be managed by a groundwater sustainability agency (GSA). The GSA is responsible for locally managing the groundwater subbasin through the development and implementation a Groundwater Sustainability Plan (GSP). Medium and high priority groundwater subbasins are required to submit their GSP by 2022 and critically overdrafted subbasin are required to submit their GSP by 2020. As the primary water purveyor in the Westside Subbasin, the Westlands Water District is the designated Groundwater Management Agency for the subbasin. DWR has designated the Westside Subbasin as a critically overdrafted basin for which a draft GSP is to be completed by WWD by January 31, 2020.

Westlands Water District

The Westlands Water District provides agricultural irrigation water to the WSP plan area from surface water deliveries provided by the U.S. Bureau of Reclamation from the Central Valley Project (CVP) facilities that convey captured Sierra snowmelt to the west side of the San Joaquin Valley. WWD water users conjunctively use surface water and groundwater, and quantities vary depending on the surface water allocation from the CVP's South of Delta agricultural allocation. Groundwater is pumped by growers within the District to augment surface supplies. In an ongoing effort to adapt to surface supply shortages, and to reduce groundwater overpumping, WWD provides funding for education and technology, enabling growers to effectively utilize surface water allotments through efficiencies. The District also monitors the water quality and quantity of pumped groundwater as part of its Water Management Plan (WWD 2013).

A key component of the District's Water Management Plan is water conservation. This program consists of the following elements.

- Irrigation Guide for water requirements per crop
- Water Conservation and Management Handbook
- Workshops and meetings on water management information
- Technical assistance and conservation computer programs
- Meter repair and update program

- Groundwater monitoring
- Pump efficiency tests
- Conjunctive use of supplies
- Irrigation System Improvement Program
- Satellite imagery purchased about once every two weeks from USGS

As the primary water purveyor in the DWR-designated critically overdrafted Westside Subbasin, WWD is serving as the GSA for the subbasin, effective November 1, 2016, pursuant to SGMA (described above).

Kings County

Kings County General Plan

The 2035 Kings County General Plan contains the following goals, objectives, and policies related to water supply and wastewater collection and treatment that are relevant to the proposed project:

Resource Conservation Element

A. Water Resources

RC GOAL A1 *Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long-term sustainable water supplies for the region.*

RC OBJECTIVE A1.1 *Maintain and Protect Existing Water Supplies.*

RC Policy A1.1.2: Review new discretionary development proposals, including new or expanded uses within agricultural zone districts, to ensure that there are adequate water supplies to accommodate such uses. Projects should provide evidence of adequate and sustainable water availability prior to approval of a tentative map or other land use approval.

RC OBJECTIVE A1.2 *Conserve and reuse water to provide for the efficient use of water resources.*

RC Policy A1.2.2: Require the use of low water consuming, drought-tolerant and native landscaping and other water conserving techniques, such as mulching, drip irrigation and moisture sensors, for new development.

RC OBJECTIVE A1.3 *Secure additional water supply sources to meet current and future water demand.*

RC Policy A1.3.2: Evaluate new urban development for compliance to SB610 and SB221 to ensure that adequate water supply sources and facilities are available to accommodate the new demand that would be created by such development.

RC OBJECTIVE A1.4 *Protect the quality of surface water and groundwater resources in accordance with applicable federal, state and regional requirements and regulations.*

RC Policy A1.4.4: Encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

RC OBJECTIVE A1.6 *Protect groundwater quality by applying development standards which seek to prevent pollution of surface or groundwater and net loss of natural water features.*

RC Policy A1.6.2: Support measures to ensure that water users do not unreasonably use groundwater resources.

Kings County Integrated Waste Management Plan

Adopted in 1995, the Kings County Integrated Waste Management Plan (CIWMP) was prepared in order to demonstrate how the County's solid waste would be reduced by 25 percent by 1995 and 50 percent by 2000, as required under AB 939. The CIMWMP addresses the long-term ability to ensure the implementation of countywide diversion programs and provision of adequate disposal capacity through siting of disposal and transformation facilities. The Kings County CIWMP incorporates the Source Reduction and Recycling Element (CIWMP) and Household Hazardous Waste Element (HHWE)(Kings County 1995).

Kings County Code of Ordinances

Plumbing Code/Sewage Disposal

Section 5-81 of the Kings County Code of Ordinances adopts the 2007 Edition of the California Plumbing Code as the County's plumbing code, except with respect to the location of sewage disposal systems, for which the County Plumbing Code sets forth its own specific requirements. These requirements relate to minimum setbacks and clearances of sewage disposal systems relative to property lines, wells, streams, and the like. The code also sets forth minimum leach field area requirements which correspond to the rated absorptive capacities of four broad soil types throughout the County, and the Code includes a map showing areas of the County covered by the four soil types. In general, the Code prescribes relatively greater leaching areas for soils with slower absorptive capacities. The soil types are assigned the letter identifiers "A," "B," and "C," with soil type "A" having the greatest absorptive capacity and type "C" having the least. There is a fourth category that applies to soils with very slow absorptive capacities, and for which engineered systems are required. In these areas, the design of septic systems is to be governed by several guidance documents including: "Guidelines for Waste Disposal from Land Developments," California Regional Water Quality Control Board, "Manual of Septic Tank Practice" by U.S. Dept. of Health, Education, and Welfare, and the "Uniform Plumbing Code," 1994 Edition (Kings County 2016b).

Well Permits

Chapter 14A of the Kings County Code of Ordinances requires the issuance of a County permit prior to construction, modification, repair, and destruction of water wells. The ordinance requires compliance with DWR's water well standards, and sets forth the application and review process and general permit conditions (Kings County 2016b).

Solid Waste Separation

Section 13-11 of the Code of Ordinances requires that recyclables be separated from solid waste at the premises where the solid waste is generated, and that recyclables be placed into different containers for collection (Kings County 2016b).

Kings County Improvement Standards

The Kings County Improvements Standards serves as an engineering reference for Kings County staff and private parties in the design and construction of improvements for public works projects and private development improvements. The standards include engineering design specifications for the construction of streets, water supply systems, storm drainage, and sewage disposal (Kings County 2003).

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. Transmission projects that are to be constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local jurisdictions regarding consistency of their projects with local plans and policies (CPUC 1994). Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Public Facilities and Services Element of the Fresno County General Plan several policies related to utilities and service systems. In general these policies call for reduction of groundwater use and implementation of water conservation measures, the prevention of water quality and health impacts associated with individual sewage disposal systems, and promotion of solid waste diversion through reduction, reuse, and recycling. The Public Facilities and Services Element is directly accessible at the following web address: http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Public_Facilities_Element_rj.pdf

3.14.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to result in a significant impact to utilities and service systems if it would:

a. Have insufficient water supplies available to serve the project from existing entitlements and resources. (Impact UTS-1)

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). (Impact UTS-1)

c. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities or infrastructure, the construction of which could result in significant environmental effects. (Impacts UTS-1 and UTS-2)

d. Exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board. (Impact UTS-2)

e. Result in a determination by the wastewater treatment provider which serves the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (Impact UTS-2)

f. Not be served by a landfill with sufficient permit capacity to accommodate the project's solid waste disposal needs. (Impact UTS-3)

g. Not comply with federal, state, and local statutes and regulations related to solid waste. (Impact UTS-3)

IMPACTS AND MITIGATION

Impact UTS-1. Water Supply

***Westlands Solar Park*. The WSP solar facilities would require water supplies during the construction and operational phases; however, existing water supply sources and infrastructure would be adequate to serve the water demands of the WSP solar facilities without resulting in impacts to surface and groundwater resources, or requiring expansion of water supply facilities or additional water entitlements. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would require relatively small amounts of water for dust suppression during construction. Existing water supply sources and infrastructure would be adequate to serve the water demands of the gen-tie projects without resulting in impacts to surface and groundwater resources, or requiring expansion of water supply facilities or additional water entitlements. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a', 'b', and 'c' above.

Westlands Solar Park

Construction Water Supply

During grading and construction of the solar facilities, water would be regularly applied to exposed soils and internal access driveways for dust suppression. During earthwork, water would also be required in soil conditioning for optimum moisture content. Based on a water application rate of 0.2 af/ac, a typical 250 MW solar facility with a 2,500-acre site area would require 500 acre-feet of water during grading and construction. Under a scenario where two large solar facilities would have overlapping construction schedules, it is estimated that water demands during the peak construction year would be 729 acre-feet. (This scenario occurs in the latter stages of WSP buildout, when operational water demands would be 229 afy and construction water demands for two 250-MW solar projects would be 500 afy.) (WRP 2017).

Construction water would be pumped from existing agricultural wells to refill water trucks which would be stationed at the construction sites.

The annual agricultural water requirement for irrigation throughout Westlands Water District is approximately 2.5 af/ac/yr of land under irrigation. While most of the irrigation water requirements are met through CVP surface water deliveries, the contract water must be augmented by groundwater every year to meet irrigation needs. The rate of groundwater pumping varies substantially from year to year depending on the percentage of CVP water allocation that is available in a given year. During years when WWD receives most of its CVP water allocation, groundwater pumping provides a relatively minor portion of irrigation requirements. During years of severe drought, like the recent drought of 2012 through 2015, groundwater pumping increases to make up for shortfalls of surface water deliveries. In the 30-year period from 1988 to 2017, groundwater withdrawals within WWD averaged 273,000 AF per year, or the equivalent of approximately 0.48 acre-feet per irrigable acre within WWD. Westlands Water District is in the process of developing the sustainable yield of the subbasin through its compliance efforts under the Sustainable Groundwater Management Act (SGMA)(see Section *3.8. Hydrology and Water Quality* for a description of SGMA). Once the sustainable yield number is determined, the yield per acre will vary somewhat throughout WWD depending on localized hydrogeology.

As mentioned, the average water demand during SGF construction would be 0.2 af/ac/yr, compared to an average of 2.5 af/ac/yr for irrigated agriculture), a reduction of 2.3 af/ac/yr. Although all of the construction water would be obtained from groundwater, the 0.2 afy/ac. required would be well below the historical average agricultural pumping rate of 0.48 af/ac/yr over the past 30 years. Therefore, while groundwater pumping for SGF construction would continue for 12 years, the groundwater pumped

during construction would be substantially less than historical pumping volumes, and thus would very likely be within sustainable yield (currently in the process of being determined by WWD) for the groundwater basin on a per acre basis.

As noted above, a Water Supply Assessment (WSA) pursuant to SB 610 was prepared for the Westlands Solar Park and is contained in Appendix F of this EIR. The WSA concluded that groundwater supplies from the Westside Subbasin will meet construction demands for the WSP during the 12 year construction period, in addition to the demand from existing and other planned future uses (WRP 2017). (Note: While WSP construction would occur over a 12-year period, construction would take place in portions of 13 calendar years, beginning in late 2018 and ending in late 2030. As such, the WSA includes water demand estimates for each of the 13 years in which construction would take place.)

In summary, adequate supplies of water for construction of WSP solar facilities would be provided from existing groundwater wells within the WWD plan area; and the groundwater pumping for SGF construction would not exceed groundwater safe yield within the Westlands groundwater basin. Therefore, the water supply impacts associated with construction of WSP solar facilities would be *less than significant*.

Operational Water Supply

Upon completion, each WSP solar facility would require water supply for operations and maintenance activities such as panel washing, cleaning of equipment and vehicles, landscape irrigation, and for domestic uses such as drinking, flushing, and washing. As discussed in Chapter *2. Project Description*, it is estimated that the typical 250 MW solar facility within WSP would generate water demands of up to 33.8 afy, of which 30.7 afy would be used in panel washing (this estimate assumes 4 panel washing cycles per year). The remaining 3.1 afy would be used for other operations and maintenance activities. Upon full buildout of WSP solar facilities, the total operational water demands would be approximately 270.4 afy, or 0.135 af/ac/yr. Under current conditions, average District-wide water demand for lands under irrigation is 2.5 af/ac/yr. Thus the operation of WSP solar facilities would reduce water demands within the plan area by about 2.365 af/ac/yr on parcels currently under irrigated agriculture.

With the exception of water for domestic use (e.g., drinking, cooking, etc.), all water demands for the solar facilities would be met with nonpotable water. Potable water for domestic use would be provided by bottled water.

Non-potable water supplies for WSP solar facilities would be entirely provided by surface water delivered through the WWD conveyance facilities. Once construction is completed within each WSP solar facility, groundwater pumping would cease to be a source of water supply within that facility site. As discussed in Section *3.14.1. Environmental Setting* above, WWD maintains a permanent distribution system consisting of buried pipelines that convey surface water deliveries to farmlands throughout the District. Surface water for the WSP plan area is conveyed by a series of lateral pipes extending eastward from the San Luis Canal/California Aqueduct to metered valves located throughout the plan area. Water would be pumped directly into water trucks or piped to water storage tanks located at the solar facilities.

Surface water for WSP solar facilities would be provided through WWD's set asides for M&I (Municipal & Industrial) water as provided for in the District's Rules and Regulations. In 2011, the WWD Board of Directors approved an amendment to the District rules and regulations that will allow the delivery of up to 5 af/year of M&I water per 160 acres of solar development (WWD 2013a). As discussed above, it is

estimated that the WSP solar facilities would have operational water demands of up to 0.135 af/ac/yr, or about 2.16 af per 160 acres per year. Thus WSP operational water demands would fall well within the 5 af per 160 acre limit set by WWD for solar facilities. During periods of prolonged drought and curtailment of CVP surface water deliveries, any shortages of delivered M&I water could be filled by acquisition of additional water supply on the open market.

It is possible that periodic shortages of imported surface water could prompt solar facility operators to turn to groundwater pumping to supplement surface water deliveries. Under a hypothetical worst-case scenario where all operational water supplies were temporarily obtained by groundwater pumping, the total annual WSP groundwater withdrawals would be 270.4 afy, or 0.135 af/ac/yr. This pumping volume would still be low compared to historical average agricultural pumping rates of 0.48 af/ac/yr over the past 30 years.

As noted above, a Water Supply Assessment (WSA) pursuant to SB 610 was prepared for the Westlands Solar Park and is contained in Appendix F of this EIR. The WSA concluded that District water supplies will meet projected operational water demands for the WSP over a 20 year planning horizon, in addition to the demand from existing and other planned future uses. No supply deficiencies are expected in normal, dry, and multiple dry years for operation of the Westlands Solar Park (WRP 2016).

Based on the above discussion, the water supplies available to WSP solar facilities would be more than adequate to reliably meet their operational water demands, without impacts to groundwater resources. Therefore, the water supply impacts associated with the operation of WSP solar facilities would be *less than significant*.

In summary, the water demands for construction and operation of WSP solar facilities would be met from existing water supply sources without resulting in groundwater withdrawals above the safe yield of the groundwater basin. Therefore, the water supply impacts associated with the development of the WSP solar facilities would be *less than significant*.

WSP Gen-Tie Corridors

During construction, the gen-tie projects would require water for dust suppression at work sites and staging areas, and on access roads. The water would be obtained from agricultural wells or municipal water sources in the vicinity and transported in water trucks to the work sites and access roads. Drinking water for work crews would be provided by bottled water. Little or no water would be required during operation of the gen-tie facilities. Existing water supply sources would be adequate to provide the relatively small amount of water required for construction of the gen-tie projects, and no expansion of water facilities or additional water entitlements would be required. Therefore, the impacts of the gen-tie projects upon water supplies would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact UTS-2. Wastewater Treatment and Disposal

***Westlands Solar Park*. The WSP solar facilities would each have septic tanks that would be pumped periodically for off-site disposal at an approved wastewater facility. It is not expected that any WSP solar facility would utilize septic tank and leachfield systems for on-site wastewater treatment and disposal. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The wastewater treatment and disposal needs of the WSP gen-tie projects during construction would be provided by portable chemical toilets, and there would be no sanitary facilities required during operation of the gen-tie facilities. Therefore, the impacts of the WSP gen-tie projects in terms of wastewater treatment and disposal would be negligible. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'c', 'd', and 'e' above.

Westlands Solar Park

During construction of each WSP solar facility, the domestic wastewater generated by construction workers would be accommodated through the use of portable toilet facilities, with regular cleanout and disposal at an approved disposal facility. The potential water quality impacts due to construction wastewater would be *less than significant*.

Upon completion, the operational wastewater disposal needs for each WSP solar generating facility would be provided by individual septic tanks which would be emptied as needed by septic tank pumping contractors and disposed of at an approved wastewater treatment facility. For smaller solar facilities, the sanitary needs of workers visiting the solar facilities for maintenance activities may be provided by portable chemical toilets that would be serviced by a private contractor. Therefore, the potential impacts resulting from operational wastewater generation would be *less than significant*.

It is not expected that any WSP solar facilities would include onsite leachfields as a method of wastewater treatment and disposal. If any individual septic tank and leachfield systems are proposed for WSP solar facilities, such systems would be located, designed, constructed, operated, and maintained in accordance with Regional Water Quality Control Board and County Health Department requirements and the specific design requirements of the Kings County Plumbing Code. As discussed in Section *3.14.3. Regulatory Context* above, the required amount of leachfield area required by the Plumbing Code would depend on the rated absorptive capability of the underlying soil, with soils rated from "A" to "C" with decreasing absorptive capacity, and with a final soil classification with very slow absorption capability where the Plumbing Code requires engineered systems. The majority of WSP soils have a "B" classification, indicating a moderate absorptive capacity, and a small area at the west end of the plan area has an "A" classification, indicating greater absorptive capacity. The size of the required leaching areas and overall usable disposal areas increases as absorptive capacity decreases. In the northeastern portion of the WSP plan, representing approximately 30 percent of the plan area, the soils have very low absorptive properties and therefore the County would require engineered systems for wastewater disposal in this area. In these areas, the septic systems are to be designed depending on

specific soil conditions at the leachfield location, with the system designs governed by County and state design requirements, and subject to approval by the County Health Department. Any septic tank and leachfield systems that might be proposed for an individual solar facility would be subject to strict engineering and health standards in order to prevent water quality impacts.

WSP Gen-Tie Corridors

During construction of the WSP gen-tie projects, the sanitary needs of construction workers would be provided by portable chemical toilets that would be serviced by a private contractor. Operation of the gen-tie facilities would involve periodic inspection and maintenance activities by workers visiting the sites, for which there would be no need for permanent wastewater facilities. As such, there would be no permanent wastewater facilities associated with the WSP gen-tie projects. Therefore, the impact of the gen-tie projects upon wastewater treatment and disposal would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact UTS-3. Solid Waste Service and Landfill Capacity

***Westlands Solar Park*. The WSP solar development would increase the demand for solid waste collection and disposal service; however, the relatively small increase in solid waste generation from the WSP solar projects would not have an adverse effect on the capacity of existing landfill facilities. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would generate small amounts of solid waste, which would be accommodated by landfills in the vicinity with minimal effects on overall landfill capacity. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'f' and 'g' above.

[Note: The following discussion addresses non-hazardous waste only. Hazardous waste disposal is addressed in Section *3.7. Hazards and Hazardous Materials*.]

Westlands Solar Park

The development of WSP solar facilities would temporarily generate construction waste during the development phase, and would generate solid waste during operation of the PV solar facilities. The solid waste impacts during both the construction and operational phases are discussed in turn below.

Construction Phase

During construction of the solar facilities, the waste generated would primarily consist of non-hazardous waste materials such as packing containers and materials, waste lumber, wood pallets, scrap metal, glass and paper. (Since site clearing would involve mulching or plowing under of crop remnants, it is anticipated that greenwaste generation would be minimal if anything.) Based on construction waste generation rates at a similar solar PV project in northern Los Angeles County, the construction of solar projects within WSP is estimated to generate approximately 26.5 cubic yards (cy) of construction waste per MW of installed generating capacity (LA County 2010, p. 4-51). [1 cubic yard (cy) of construction waste is equivalent to approximately 1 ton of construction waste (CalRecycle 2016b).] It is anticipated that the WSP solar development would be installed at an average rate of 167 MW per year over 12 years. Thus construction of the 2,000 MW of WSP solar capacity would generate a total of approximately 53,000 tons (or cy), or about 17.7 tons/cy per day on average (assuming 250 work days per year over 12 years). Much of the construction waste materials would be reusable (e.g., wood pallets and packing crates), or recyclable (e.g., clean lumber, scrap metal, paper, glass), and doing so has been shown to be cost effective (CalRecycle 2004). Therefore, although Kings County does not have a Construction and Demolition (C&D) Waste Diversion Ordinance in place, it is reasonable to assume that at least 50 percent of the construction waste would be recycled or reused. Thus approximately 8.85 tons of construction waste from WSP would be disposed of at a Class III landfill per day. Assuming that all of the non-recycled waste would be hauled to the Chemical Waste Management Landfill (CWML) site in the Kettleman Hills, the 8.85 tons of daily construction waste generated at WSP would represent about 1.0 percent of the current the daily average solid waste disposal (877 tons per day in 2015) at the CWML. With the addition of WSP construction waste, the total daily solid waste disposed at CWML would remain well below the 2,000 ton per day permitted limit. Additionally, the total 53,000 tons (or 53,000 cy) of construction waste generated by WSP over the 12-year construction period would represent 0.34 percent of the remaining 15.8 million cy capacity of CWML. Both the daily disposal rate and the total construction waste generated at WSP would represent small increases in solid waste accepted at CWML (Waste Management 2016).

Operational Phase

During operation of the WSP solar facilities, the non-hazardous waste generated would include typical refuse generated by workers and small office operations such as scrap metal and machine parts, broken or defective electrical components, oily rags, packing material from deliveries, paper, cardboard, plastic, empty containers, and miscellaneous solid waste. Each solar facility operator within WSP would contract with a commercial waste collection service which would haul the waste to the Kings Waste and Recycling Authority Material Recovery Facility in Hanford for sorting and recycling and/or transport the non-recyclable waste to local landfill site.

Based on operational solid waste generation rates at a similar solar PV project in northern Los Angeles County, the solar projects within WSP are estimated to generate approximately 0.9 cubic yards (cy) of solid waste per year per MW of installed generating capacity (LA County 2010, p. 4-53). [Approximately 4 cubic yards (cy) of uncompacted solid waste from commercial/industrial sources is equivalent to approximately 1 ton of municipal solid waste (USEPA 1997).] Upon full operation, the solar facilities within WSP would generate a total of approximately 1,800 cubic yards, or approximately 450 tons of non-hazardous solid waste per year. Assuming that at least 50 percent of the solid waste would

diverted through recycling, the remaining 225 tons (900 cy) of solid waste from WSP would be disposed of at a Class III landfill per year (or 0.9 tons per day). With compaction, the landfill volume would be reduced by about half that, or 450 cy. Assuming that all of the non-recycled waste would be hauled to the Chemical Waste Management Landfill (CWML) site in the Kettleman Hills, the 225 tons of annual solid waste generated at WSP would represent about 0.1 percent of the current the annual solid waste disposal (219,316 tons in 2015) at the CWML. The solid waste generated from WSP operations would total about 0.9 tons per day, increasing the average daily solid waste disposed at CWML to 878 tons per day, which would remain well below the 2,000 ton per day permitted limit**.** Both the daily disposal rate and the total non-hazardous solid waste generated at WSP would represent small increases in solid waste accepted at CWML.

As discussed in Section *3.14.1. Environmental Setting*, the CWML has a remaining capacity of approximately 15.8 million cubic yards, and is not anticipated to reach capacity until at least 2030. Assuming the first WSP solar facility is completed in 2018 and the final solar facility is completed in 2030, the total solid waste generated by operation of WSP solar facilities during that period that would be approximately 10,800 cy (assuming 50 percent diversion, the amount landfilled would be approximately 5,400 cy [1,350 tons]). When combined with the 53,000 cy of construction waste generated during that period (or 27,500 cy [27,500 tons] assuming 50 percent diversion), the total landfilled solid waste from construction and operation of WSP solar facilities would be about 32,900 cy (28,850 tons) by 2030. This represents 0.2 percent of the total remaining capacity of the CWML, or less than 15 days of permitted disposal at the CWML (an average of one day per year), and would not appreciably shorten its operating life. Therefore, the impacts of WSP solar facility development upon landfill facilities would be *less-than-significant*.

With respect to solid waste service, the WSP solar project would be served by commercial haulers. It is expected that the increased service demands from the WSP solar projects would be met through incremental increases in staff and equipment, which would be funded through fees for service. Therefore, the impacts WSP solar development upon solid waste collection service in Kings County would be *less than significant*.

All waste generated by construction and operation of WSP solar facilities would be disposed of in accordance with federal, state, and local regulations. The development WSP solar facilities would not require the development of new landfills, nor would it require existing landfills to be expanded. The recycling practices within each WSP solar facility during construction and operation would reduce the amount of solid waste that would be landfilled. Based on the above discussion, the impact of WSP solar facility construction and operation on existing landfill facilities would be *less than significant*.

WSP Gen-Tie Corridors

The construction of the WSP gen-tie projects would generate small amounts of solid waste, which would mainly consist of scrap materials and debris. Waste materials would be salvaged for reuse or recycled to the extent practicable. Other non-hazardous construction materials would be disposed of at municipal landfills, such as the CWML facility in Kings County. During operation of the completed gen-tie facilities, little or no solid waste would be generated. The small amounts of solid waste generated by construction of the gen-tie projects, and the negligible amount of solid waste generated by operation of the gen-tie facilities, would have minimal effects on the remaining capacities of the landfills in the

vicinity. Therefore, the impacts of the WSP gen-tie projects upon landfill facilities would be *less-than-significant*.

All waste generated by construction and operation of the WSP gen-tie lines would be disposed of in accordance with federal, state, and local regulations. The WSP gen-tie facilities would not require the development of new landfills, nor would it require existing landfills to be expanded. The salvage and recycling practices implemented during construction and operation would reduce the amount of solid waste that would be landfilled. Based on the above discussion, the impact of the WSP gen-tie facilities on existing landfill facilities would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact UTS-4. Cumulative Utilities and Service Systems Impacts

***Westlands Solar Park*. The development of the WSP solar facilities combined with other planned and proposed development in the area would require water supplies, wastewater disposal, and solid waste disposal. However, the cumulative impact of these planned and proposed projects upon these utilities and service systems would be less than significant. (*Less-than-Significant Cumulative Impact*)**

***WSP Gen-Tie Corridors*. The construction of the WSP gen-tie projects would generate minimal demand for water supplies, wastewater disposal, and solid waste disposal. Thus, while cumulative impacts to these services from other approved and pending projects may be cumulatively significant, the contribution of the WSP gen-tie projects to any such cumulative impact would be not cumulatively considerable. Therefore, the cumulative impact to utilities and service systems associated with the WSP gen-tie projects would be less than significant. (*Less-than-Significant Cumulative Impact*)**

Geographic Scope of Cumulative Analysis

The scope of analysis for utilities and services systems varies depending on the service under consideration. For water supply, the geographic scope of analysis is the WWD service area since water supplies for WSP solar facilities operations would be provided by WWD. For wastewater disposal, the geographic scope of analysis includes the western portions of Kings and Fresno Counties that are located within the Westlands Hydrologic Area (HA) of the Tulare Basin Hydrologic Region (this HA generally coincides with WWD service area boundaries in the WSP area). For solid waste disposal, the geographic

scope of analysis encompasses the service areas of the solid waste collection services and the landfill facilities.

Westlands Solar Park

Near Term

Water Supply

The WSP solar facilities will obtain construction water supplies from groundwater wells. Operational water supplies would be obtained from M&I surface water deliveries from WWD which would be conveyed to the WSP plan area through the existing WWD water distribution system. Cumulative impacts to groundwater resources are considered in the context of the Westside Subbasin, and impacts to surface water supplies are considered within the context of the WWD service area. The boundaries of the Westside Subbasin roughly coincide with the boundaries of the WWD service area. In addition to the Westlands Solar Park, there are currently 28 solar PV projects that are approved, pending, completed, or partially completed within the Subbasin/WWD boundaries. (Note: This does not include the approved and partially completed Westside Solar project or the proposed Aquamarine Solar project since they are both located within the WSP plan area.) The total land area covered by these other projects is approximately 22,599 acres, with a total generating capacity of 2,478 MW. Based on an average construction water demand rate of 2.0 af/MW (or 0.2 af/ac, on average, based on land requirements of approximately 10 acres per MW), these other projects would consume a total of 4,956 acre-feet of water during construction (plus 4,000 acre-feet for WSP, for a cumulative total of 8,956 acre-feet). It is assumed that all construction water would be obtained from local groundwater sources within the subbasin, and it is expected that construction of each acre of solar project would take far less than one year. The consumption rate of 0.2 af/yr/ac would be low compared to historical average agricultural pumping rates of 0.48 af/ac/yr over the past 30 years. Upon completion, operational water demands would be approximately 0.0135 af/ac/yr. Although the WSP solar projects would obtain operational water supplies from WWD M&I deliveries, it is expected that operational water for the other solar projects would be obtained from groundwater sources within the subbasin. These operational water demands would be well below the historical average groundwater pumping volumes of 0.48 acre-feet per acre. Although not all of the cumulative project sites are under irrigated agriculture under pre-project conditions, it is expected that the cumulative solar development would result in a substantial reduction in groundwater pumping at the affected sites.

In summary, neither the short-term construction of the other planned projects within the subbasin, nor the long-term operational water demands from each project, would exceed the safe yield of the groundwater basin. Therefore, the construction and operational water demands for the other planned projects in the subbasin could be met from existing groundwater sources without contributing to cumulative overdraft of the subbasin. Therefore, the cumulative impact to groundwater resources resulting from construction and operation of the cumulative projects within the study area in the near term would be *less than significant*.

Wastewater Treatment and Disposal

The WSP solar facilities are expected to utilize septic holding tanks or chemical toilets, which would be serviced by a pumping contractor with disposal at an approved facility. Although not currently anticipated,

it is possible that larger solar facilities within WSP may utilize septic tank and leachfield systems for disposal of domestic wastewater at their O&M facilities. As discussed under Impact UTS-2 above, any such septic systems would be designed, constructed, and maintained in compliance with County and State standards, and would conform to minimum required setback distances from wells and watercourses. As such, the potential for contamination from any WSP septic systems, individually or collectively, would be negligible. Considering that solar PV projects are typically operated by off-site contractors with no permanent on-site staff, it is expected that the other cumulative solar PV projects would likewise utilize septic holding tanks or chemical toilets, and that no septic tank and on-site leachfield systems would be constructed. If any of the cumulative projects plan to utilize septic and leachfield systems, such systems would be subject to County and State design standards to ensure proper functioning of the systems and avoid groundwater contamination. As such, the potential for groundwater contamination from near-term cumulative development in the study area is negligible. Therefore, the potential for water quality impacts to occur under near-term cumulative conditions is *less-than-significant*.

Solid Waste

Since management of solid waste occurs on a County-wide basis, the geographic scope of analysis for cumulative solid waste impacts associated with WSP solar development consists of the lands within Kings County. The current list of pending and approved projects in Kings County is shown in Table PD-9 in the Chapter *2. Project Description.*

As shown in Table PD-9, there are 26 other pending, approved, completed or partially completed solar PV projects in Kings County, plus one solar project within NAS Lemoore, with a total electrical generating capacity of 1,387 MW (again, not including the 22 MW Westside Solar project or the 250 MW Aquamarine Solar project located within WSP). With the addition of the 2,000 MW of solar generation within WSP, the total cumulative generation would be 3,387 MW. During construction, solid waste would be generated at the rate of 26.5 cy (or tons) per MW, or 89,756 cy (or tons) in total. Assuming 50 percent diversion through salvage and recycling, the total disposal to landfill would be 44,878 cy (or tons).

During operation of the completed PV facilities, solid waste would be generated at the at 0.9 cy per MW per year, or 3,048.3 cy annually, in total. Assuming half of this solid waste is diverted, the remaining 1,524.2 cy (or 381 tons) would be landfilled annually. If, for purposes of analysis, it is conservatively assumed that all of these cumulative solar facilities were fully operational in 2018, the total operational solid waste generated through 2030 would be 19,815cy (or 4,954 tons).

The total solid waste generation (after diversion) from the construction and operation of the cumulative solar projects through 2030 would be approximately 49,832 tons. Assuming that all of the non-recycled waste would be hauled to the Chemical Waste Management Landfill (CWML) site in the Kettleman Hills, this would represent 0.3 percent of the total current remaining 15.8 million tons of capacity at the CWML through 2030. Stated differently, the total cumulative solid waste generation would be equivalent to 25 days of permitted solid waste disposal of 2,000 tons per day at the CWML facility.

With respect to solid waste service, the cumulative solar projects would be served by commercial haulers. It is expected that the increased service demands from the cumulative projects would be met through incremental increases in staff and equipment, which would be funded through fees for service. Therefore, the impacts of near-term cumulative development upon solid waste collection service in Kings County would be *less than significant*.

All waste generated by construction and operation of the cumulative projects would be disposed of in accordance with federal, state, and local regulations. The development of the cumulative projects would not require the development of new landfills, nor would it require existing landfills to be expanded. The recycling practices within each cumulative solar facility during construction and operation would reduce the amount of solid waste that would be landfilled. Based on the above discussion, the cumulative impact of WSP solar facility construction and operation on existing landfill facilities would be *less than significant*.

Summary

Based on the discussion above, the near-term cumulative impacts associated with WSP solar development on utilities and service systems would be *less-than-significant*.

Far Term

Water Supply

Under far-term conditions, the WWD service area could be subject to substantial solar PV development, given that solar PV facilities are conditionally permitted uses on the majority of agricultural lands in Kings County, and are also conditionally permitted in agricultural areas in Fresno County. Since the other non-agricultural uses that may be developed within the agricultural areas of the WWD service area are unforeseeable, and are limited under applicable general plan and zoning designations, this discussion is focused on solar PV development. While the locations, numbers, and sizes of solar PV developments within the WWD service area cannot be predicted, the water consumption impacts of such development can be analyzed because solar PV projects are fairly uniform in character and can be typified in terms of demands for water.

During construction of solar PV facilities, average water use would be approximately 0.2 af/ac, primarily for dust control, which would be obtained from groundwater wells. This consumption rate would be low compared to historical average agricultural pumping rates of 0.48 af/ac/yr over the past 30 years. Upon completion, operational water demands would be approximately 0.0135 af/ac/yr, which would also be substantially below historical average water withdrawals from the groundwater basin. Although the WSP solar projects would obtain operational water supplies from WWD M&I deliveries, it is assumed that operational water for the other future solar projects would be obtained from groundwater sources within the subbasin. Therefore, the impacts associated with groundwater pumping for cumulative development would be *less than significant*.

In summary, the impact of far-term cumulative development upon groundwater resources and surface water supplies would be *less than significant*.

Wastewater Disposal

Under far-term conditions, development within the western Kings County and western Fresno County study area would proceed in accordance with the respective County general plans. While predicting the future development pattern is somewhat speculative, the agricultural land use designations applicable to the study area could allow substantial additional solar PV development. In addition, while there are few dairies currently operating in the study area, they would be permitted throughout the portions of the

study area located south of Kansas Avenue under the Dairy Element of Kings County, and would also be permitted under the Fresno County General Plan. The potential cumulative effect of wastewater disposal from these two land uses under far-term conditions is discussed below.

While substantial solar PV development could occur within the marginal quality farmlands within the study area, it is expected these facilities would be operated by staff stationed at off-site locations. Thus it is expected that all solar facilities would be served by septic holding tanks or chemical toilets, and that none would have individual septic tank and leachfield systems constructed on site. In the unlikely event that any such septic systems are proposed, they would be required to be designed and constructed in accordance with County and State standards to minimize the potential for nitrate contamination of the groundwater. Therefore, it is highly unlikely that even substantial solar PV development in the study area under far-term conditions would result in cumulative contamination of the groundwater.

With respect to dairy operations, it is possible that a considerable number of new dairy operations could become established in the study area under far-term conditions. While they are permitted throughout large portions of the study area under both the Kings County and Fresno County general plans, the permitting of new and expanded dairies in Kings County would be based on a determination of the maximum allowed herd size in each case through calculations of the carrying capacities of the proposed dairy sites (Kings County 2002, p. DE-9). These calculations would be made in accordance with the methodology required by the Central Valley Regional Water Quality Control Board for establishing nutrient loading levels to reduce the potential for water quality impacts. It is expected that these permit processes, in addition to the design and management requirements placed by the counties on new and expanded dairy operations, particularly for manure management, would minimize the potential for water quality impacts, on an individual project and cumulative basis. Therefore, while the locations, numbers, and sizes of new and expanded dairies that could be established in the study area under far-term conditions cannot be predicted, the operation of the County permit processes and Regional Board oversight would minimize the potential for cumulative nitrate contamination of the groundwater within the study area.

In summary, the potential water quality impacts from wastewater disposal under far-term cumulative conditions would be *less than significant*.

Solid Waste

Under far-term conditions, it was estimated in the Kings County General Plan EIR that the net increase in solid waste generation in Kings County would be approximately 8,784 tons per year (Kings County 2009c, p. 4.15-16). However, the GP EIR did not consider solid waste generation from solar PV facilities, which was unforeseeable at the time the GP EIR was prepared. For purposes of this analysis, it is assumed that the 4,954 tons of solid waste generated annually by operation of the near-term solar PV projects, including the WSP solar facilities, would double to about 9,908 tons with the addition of new solar projects by the time of GP buildout. This would bring the total estimated net increase in annual solid waste generation to 18,692 tons per year (after diversion) under far-term conditions. This would be approximately 74.8 tons per day (assuming 250 disposal days per year), or 3.7 percent of the daily permitted maximum 2,000 tons per day at the CMWL. This would not represent a significant increment in daily solid waste volume received at the CMWL. (The total increase in far-term solid waste generation from solar project construction would be about 89,756 tons through 2030, assuming a doubling of near-term cumulative solar projects. This increment would represent approximately 0.5 percent of the remaining capacity of the CMWL facility and would not be significant.

As noted, the CMWL is expected to reach its full permitted capacity by 2030, with the actual closing date depending on disposal rates. Thus it is likely that the CWML will reach capacity prior to the General Plan horizon year of 2035. The California Integrated Waste Management Act requires that counties prepare a solid waste management plan that plans for solid waste disposal sites at least 15 years into the future. Should CMWL become full prior to buildout of the 2035 General Plan, the Kings County Waste Management Authority has plans to open another landfill in Kettleman City, which once in operation is expected to serve the County through 2047 (Kings County 2009c, p. 4.15-5). In addition, future development under the 2035 General Plan would be required to comply with the Kings County Countywide Integrated Waste Management Plan. This plan includes source reduction, recycling, composting, special waste and household waste programs, all of which strive to reduce overall solid waste generation. Implementation of these programs may further extend the life of existing and planned landfills that would serve the County.

Based on the above discussion, there would be sufficient capacity at existing and planned landfill facilities to accommodate cumulative solid waste generation in Kings County in the far term. Therefore, the far-term cumulative impacts in terms of solid waste disposal would be *less than significant*.

Summary

Based on the above, the far-term cumulative impacts with respect to utilities and service systems would be *less-than-significant*.

WSP Gen-Tie Corridors

For water supply and wastewater disposal, there are no centralized facilities in the vicinity of the WSP gen-tie corridors. Given the very low water demands and wastewater service demands generated by gen-tie facilities, any potential cumulative impacts would be localized. The demand for solid waste collection and disposal service would be focused on the western portions of the Kings and Fresno counties, and particularly the landfills serving those areas.

Near Term

The near-term cumulative analysis of utilities and service systems impacts considers the approved, pending, and completed projects within the western areas of Kings and Fresno counties. These projects are listed in Tables PD-9 and PD-10, and are shown in Figures PD-9 and PD-10, in Chapter *2. Project Description*. The cumulative projects consist of solar PV generating facilities and two transmission projects – the Gates to Greg Transmission Project (Central Valley Power Connect), and the Westside Transmission Project.

Water Supply

As discussed under Impact UTS-1 above, the water demands during gen-tie project construction would be very low and would consist of water required for dust suppression on tower sites, staging areas, and access roads. Construction water would be obtained from nearby agricultural wells or municipal sources and hauled to the work sites in water trucks. Operational water demands would be negligible. The water demands from the other cumulative transmission and solar projects would also be relatively low for both construction and operational conditions. It is expected that these projects would all rely on

existing wells or municipal sources for their limited water supply requirements, and that no expansion of water facilities or additional water entitlements would be required. Therefore, the near-term cumulative impact to water supplies and facilities associated with the WSP gen-tie projects would be *less than significant*.

Wastewater

For the cumulative transmission and solar projects, it is expected that wastewater service during construction would be provided by portable chemical toilets, and operational wastewater disposal needs would be provided by septic holding tanks for the solar projects, and would not be required for the transmission projects. The chemical toilets and septic holding tanks would be serviced by contractors and would not result in on-site water quality impacts. Therefore, the near-term cumulative impact to wastewater treatment and disposal facilities associated with the WSP gen-tie projects would be *less than significant*.

Solid Waste

The cumulative transmission and solar projects would generate relatively minor amounts of solid waste during construction and very little waste during operations. As discussed in Section *3.14.1. Environmental Setting*, the nearest landfills in each affected county (CWML in Kings, and American Avenue in Fresno) both have substantial remaining capacity that would accommodate the limited solid waste volumes generated by the cumulative transmission and solar projects. Therefore, the near-term cumulative impact to solid waste disposal facilities associated with the WSP gen-tie projects would be *less than significant*.

Far Term

Water Supply

In 2030, the WSP gen-tie facilities will have been completed and operational water demands would be negligible. Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase demand for water supplies. In accordance with SB 610 and related state laws, sufficiency of water supply would need to be demonstrated prior to approval of substantial development. Given that water supply demands from the operation of WSP gen-tie facilities would be negligible, as discussed above, the contribution of the WSP gen-tie facilities to any cumulative water supply impact would be *not cumulatively considerable*. Therefore, the far-term cumulative impact to water supply associated with the WSP gen-tie facilities would be *less than significant*.

Wastewater

In 2030, the WSP gen-tie facilities will have been completed and would generate no wastewater. Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase demand for wastewater treatment and disposal facilities. Given that operating WSP gen-tie facilities would generate no wastewater, as discussed above, the contribution of the WSP gen-tie facilities to any cumulative wastewater facilities impact would be *not cumulatively considerable*. Therefore, the far-term cumulative impact to wastewater facilities associated with the WSP gen-tie facilities would be *less than significant*.

Solid Waste

In 2030, the WSP gen-tie facilities will have been completed and would generate little or no solid waste. Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase solid waste generation and demand for disposal capacity. Given that operating WSP gen-tie facilities would generate little or no solid waste, as discussed above, the contribution of the WSP gen-tie facilities to any cumulative solid waste impact would be *not cumulatively considerable*. Therefore, the far-term cumulative impact to solid waste facilities associated with the WSP gen-tie facilities would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

REFERENCES/BIBLIOGRAPHY – UTILITIES AND SERVICE SYSTEMS

CalRecycle 2004 — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2004. *Construction & Demolition (C&D) Waste Diversion in California*. January. http://www.calrecycle.ca.gov/condemo/CaseStudies/DGSDiversion.pdf

CalRecycle 2006 — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2006. *Jurisdiction Diversion/Disposal Rate Summary*. http://www.calrecycle.ca.gov/LGCentral/Reports/DiversionProgram/JurisdictionDiversion.aspx

CalRecycle 2012 — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2012. *SB 1016 Overviews*. http://www.calrecycle.ca.gov/lgcentral/Events/SB1016Oview/default.htm

CalRecycle 2016a — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2016. *C&D Debris Recyclers Database*. http://www.calrecycle.ca.gov/FacIT/Facility/Search.aspx?Activity=CD+Processing#LIST

CalRecycle 2016b — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2016. *Construction/Demolition and Inert Debris Tools and Resources – Calculations*. http://www.calrecycle.ca.gov/SWFacilities/CDI/Tools/Calculations.htm

CalRecycle 2016c — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2016. *Facility/Site Summary Details*. http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx

Fresno County 2000b — County of Fresno. 2000. *Fresno County 2000 General Plan –Policy Document*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Kings County 1995 — Kings County, 1995. *Kings County Countywide Integrated Waste Management Plan*. Adopted April 1995. http://www.countyofkings.com/home/showdocument?id=3092

Kings County 1998 — Kings County. 1998. Kings County Building Ordinance, Chapter 5 – Kings County Code of Ordinances. Adopted by Ordinance No. 567, January 15, 1998. http://www.countyofkings.com/home/showdocument?id=4068

Kings County 2002 — Kings County. 2002. *Dairy Element of the Kings County General Plan*. Adopted July 30, 2002. http://www.countyofkings.com/home/showdocument?id=4078

Kings County 2003 — Kings County. 2003. *County of Kings Improvement Standards*. May 6. http://www.countyofkings.com/home/showdocument?id=3098

Kings County 2009c — Kings County. 2009. *Draft EIR – 2035 Kings County General Plan Update*. June. http://www.countyofkings.com/home/showdocument?id=5897

Kings County 2010a — Kings County. 2010. *2035 Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan

Kings County 2012d — Kings County Website. 2012. *Kings County Division of Environmental Health – Listing of Kings County Solid Waste Facilities*. http://www.countyofkings.com/departments/environment-health-service/solid-waste/king-s-county-solid-waste-facilities

Kings County 2017 — Kings County. 2016. *Kings County Development Code, Appendix A – Kings County Code of Ordinances*. Effective April 27, 2017. http://www.countyofkings.com/departments/community-development-agency/information/zoning-ordinance

Kings County 2016 — Kings County. 2016. *Kings County Code of Ordinances, as amended through October 4, 2016*. https://www.municode.com/library/ca/kings_county/codes/code_of_ordinances

LA County 2010 — County of Los Angeles. 2010. *AV Solar Ranch One Draft EIR*. June. http://planning.lacounty.gov/assets/upl/case/project_r2009-02239_deir.pdf

SWRCB 2010 — California State Water Resources Control Board. 2010. *Groundwater Information Sheet – Salinity*. Division of Water Quality, GAMA Program. Revised March 2010 http://www.swrcb.ca.gov/water_issues/programs/gama/docs/coc_salinity.pdf

UCD 2012 — UC Davis, Center for Watershed Sciences (UCD). 2012. *Addressing Nitrate in California's Drinking Water – With Focus on Tulare Lake Basin and Salinas Valley Groundwater*. Report for the State Water Resources Control Board Report to the Legislature. California Nitrate Project, Implementation of Senate Bill X2 1. January 2012. http://groundwaternitrate.ucdavis.edu/

USBR 2006 — U.S. Bureau of Reclamation. 2006. *San Luis Drainage Feature Re-Evaluation – Final EIS*. June 8. http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=61 Accessed

USBR 2015 — U.S. Bureau of Reclamation. 2015. *Westlands v. United States Settlement*. October. http://wwd.ca.gov/wp-content/uploads/2015/10/westlands-vs-united-states-settlement.pdf

USEPA 1997 — U.S. Environmental Protection Agency (USEPA). 1997. *Measuring Recycling – A Guide for State and Local Governments*. EPA530-R-97-011. September. https://archive.epa.gov/wastes/conserve/tools/recmeas/web/pdf/guide.pdf

Waste Mgmt. 2016 — Waste Management. 2016. *Waste Management Kettleman Hills B17 Landfill – 2016 Airspace Report*. June. http://www.calrecycle.ca.gov/SWFacilities/Directory/16-AA-0027/Document/306429

WRP 2017 — Water Resources Planning (WRP). 2017. *Water Supply Assessment – Westlands Solar Park*. July. Contained in Appendix F of this EIR.

WWD 2006 — Westlands Water District (WWD). 2006. *Generalized Depth of Shallow Groundwater Surface (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/07/April-20061.pdf

WWD 2012 — Westlands Water District (WWD). 2012. *Rules and Regulations – Article 2. Regulations for Allocation and Use of Agricultural Water Within Westlands Water District*. As revised January 17, 2012. http://wwd.ca.gov/wp-content/uploads/2014/04/article.2.pdf

WWD 2013a — Westlands Water District (WWD). 2013. *Rules and Regulations – Article 19. Regulations Regarding the Application for and Use of Municipal and Industrial*

Water within Westlands Water District. As revised January 15, 2013. http://wwd.ca.gov/wp-content/uploads/2014/12/rules19.pdf Accessed September 9, 2016.

WWD 2013b — Westlands Water District (WWD). 2013. *Water Management Plan – 2012*. April. http://wwd.ca.gov/wp-content/uploads/2015/09/water-management-plan-2012.pdf

WWD 2015 — Westlands Water District (WWD). 2015. *Generalized Depth of Shallow Groundwater Surface (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/08/gdsgs-april-2015.pdf

WWD 2016 — Westlands Water District (WWD). 2016. *Deep Groundwater Conditions Report – December 2015*. April. http://wwd.ca.gov/wp-content/uploads/2016/05/2015-deep-groundwater-conditions-report.pdf

WWD 2017 — Westlands Water District (WWD). 2017. *Annual Water Use and Supply*. WWD Website. June. http://wwd.ca.gov/water-management/water-supply/annual-water-use-and-supply/

This page intentionally left blank