

5.2 WATER RESOURCES

The following paragraphs describe the characteristics of the Modified Project that could affect water resources in a different manner than the Approved Project.

5.2.1 Summary of Project Changes Related to Water Resources

Characteristics of the Modified Project that have the potential to impact water resources differently than the Approved Project include the following:

- replacement of SunCatchers with PV modules (coverage, orientation, location, spacing and size of posts);
- reduction of site footprint;
- addition of inverter pads;
- grading configuration and disturbance;
- number and types of access roads; and
- relocation of the main services complex and on-site substation south of the railroad.

5.2.2 Changes in Environmental Impacts

The Commission Decision concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS, and would not result in any unmitigated and significant direct, indirect or cumulative adverse impacts related to water resources.

The water resource topics addressed in the Commission Decision are: 1) storm water impacts related to flooding/drainage, erosion and sedimentation; 2) water supply and use, including maintenance of groundwater supplies; and 3) groundwater quality (Commission Decision, Soil and Water Resources pp. 33-35). As described below, with implementation of the Conditions, the Modified Project would not be anticipated to increase water resources impacts compared to the Approved Project.

5.2.2.1 Storm Water: Flooding, Erosion and Sedimentation

Hydrology, hydraulic, and sediment transport/scour analyses will be prepared to reflect effects of the movement of storm water under the Modified Project. These reports will quantify the hydrologic, hydraulic, and sediment transport/scour conditions for existing (without Project) and proposed (Modified Project) conditions, and will assess any need for debris/sediment basins. These reports will also quantify the effects of the Modified

Project on hydrology, hydraulics, and erosion/sedimentation on-site and at the railroad and BNSF ROW.

The following evaluation is based on currently available preliminary grading plans, site plans, and the Modified Project description. This evaluation may be updated based on a review of the results of the hydrology, hydraulics, and sediment transport/scour studies for the Modified Project. However, the changes are not expected to be substantial, because the amount of overall project disturbance area, impervious surface area, and cut and fill ranges would not differ substantially from those analyzed for the Approved Project.

5.2.2.1.1 Disturbed Area

The extent of disturbed surface area is relevant to water resources because soil disturbance tends to increase infiltration of storm water into the soil. Increases in paved and other impermeable surfaces tend to reduce storm water infiltration. In addition, ground disturbance that alters site topography through cut and fill may alter the flow across the site of storm water that does not infiltrate into the soil. Table 5.2-1 provides an estimate of the acreages that would likely be disturbed under the Modified Project.

**TABLE 5.2-1
APPROXIMATE DISTURBANCE ACREAGES**

Disturbance South of BNSF Railroad	Modified Project (Acres)
Total Site Area	2042
Unimproved Module Access Points	342
Access Road	211
Main Site Access Road	27
Main Service Complex	10
PV Modules	617
Inverters	21
Substation	15
Total Disturbed Area South of BNSF Railroad	1,244
Total Site Area	1809
Unimproved Module Access Points	362
Access Road	230
Main Site Access Road	17
Modules	556
Inverters	22

Disturbance South of BNSF Railroad	Modified Project (Acres)
Total Disturbed Area North of BNSF Railroad	1187
Totals	
Total Site Area South and North	3,851
Total Disturbed Area South and North	2,431
Percentage of Total Site Area Disturbed	63%

Under the Modified Project, the main site access road is the only road that would be paved. The access roads would be stabilized with a non-toxic soil stabilizer or soil weighting material. Unimproved module access points (no soil stabilizer applied) would be designated between every other row of PV modules; this is designed to reduce the number of access points for PV module washing and to reduce the amount of increased impervious areas on the site.

Impervious areas other than the main site access road would include roofs and pavement at the main services complex (approximately 10 acres), the inverter pads, and the on-site substation.

With the exception of bridge construction, maximum fill heights for the Modified Project are anticipated to be 10 feet. Fill heights up to 45 feet are anticipated for approaches to the bridge crossing over the railroad ROW. The anticipated average cut depth is approximately 6 feet. Although changes in cut and fill amounts are anticipated and locations of cut and fill would change across the Project site due to the installation of PV modules, the proposed cut and fill heights are not anticipated to create additional need for cut and fill compared to the Approved Project. Most of the earth movement would occur in Phase 1 (south of the railroad) to accommodate the change in technology to PV modules. The approved December 15, 2010 DESCPC showed that cut and fill was balanced at 1,200,000 cubic yards. The preliminary grading estimates for the Modified Project indicate that the cut and fill will be similarly balanced with slightly less grading.

There is the potential that the hydrologic, hydraulic, and sediment response for the Modified Project may change from that of the Approved Project as a result of the PV module spacing, coverage, post size, and PV module orientation. A revised DESCPC will be prepared and submitted under separate cover.

It is anticipated that the relocation of the main services complex and the substation to south of the railroad would not increase runoff, soil erosion, or sedimentation impacts

because the size and impermeable area of the main services complex would not increase under the Modified Project.

With implementation of the Conditions, including the requirement to prepare, and implement the recommendations of, the hydrology, hydraulic, and sediment transport/scour analyses, the Modified Project would not increase flooding, erosion, or sedimentation impacts compared to the Approved Project.

5.2.2.2 Water Supply and Use

The Modified Project would use the same water well as the Approved Project. Water would be piped to the new location of the main services complex south of the railroad. An updated water mass balance diagram is provided in Appendix D.

Construction water use would not exceed the average annual amount indicated in the Approved Project **Soil&Water-4** (145 acre-feet per year (afy)). Average annual water use during construction is currently expected to be approximately 120 afy over the anticipated four-year construction period.

Water use during operation of the Modified Project would not exceed the average annual amount indicated in the Approved Project **Soil&Water-4** (21 afy). Average annual water use during operation of the Modified Project would be approximately 20 afy. Water use during operation would include module washing (10.7 afy), water treatment (4.3 afy), potable use (0.7 afy), and dust control (4 afy). PV module washing is expected to be performed four times per year. Table 4.5-2 provides estimates of the water usage rates during operation of the Modified Project.

**TABLE 5.2-2
OPERATION WATER USAGE RATES FOR THE MODIFIED PROJECT**

Water Use	Daily Average (gallons per minute)	Daily Maximum (gallons per minute)	Annual Usage (acre feet)
Equipment Water Requirements			
PV Panel Washing	6.6	23.2	10.7
Water Treatment System Discharge			
Brine to Evaporation Ponds	2.7	14.6 ⁽¹⁾	4.3
Potable Water Use			
For drinking and sanitary water requirements	0.43 ⁽²⁾	1.1	0.7
Soil Stabilizer			

Water Use	Daily Average (gallons per minute)	Daily Maximum (gallons per minute)	Annual Usage (acre feet)
Water mixed with Soiltac for dust control	2.5	8.8 ⁽³⁾	4.0 ⁽⁴⁾
Totals	12.23	47.7	19.7

- 1 Based on the maximum amount of demineralized water required for mirror washing and assumes a decrease in raw water quality requiring an additional 40 percent of system discharge.
- 2 Assumes 30 gallons per person per day for 30 people.

The Commission Decision indicated that the impact of the Approved Project on groundwater levels would be less than significant. Because average annual construction and operation water uses would be less than or equal to the permitted amounts with the Modified Project, the impacts to groundwater would still be considered less than significant.

5.2.2.3 Wastewater

The following paragraphs discuss impacts associated with the Modified Project on sanitary wastewater, construction wastewater, and process wastewater systems.

5.2.2.3.1 Sanitary Wastewater

No increase in impacts resulting from the Modified Project has been identified in relation to sanitary wastewater. The Modified Project would require fewer workers during construction and operation than would the Approved Project, so lower demands would be imposed on sanitary systems. The Modified Project, like the Approved Project, would utilize temporary portable toilets during construction prior to the installation of a septic tank and leach field. As with the Approved Project, the septic tank and leach field would be designed to meet the requirements of the RWQCB and the San Bernardino County Public Health Department, and would meet operation and maintenance guidelines required by the California Department of Public Health. To ensure that no hydrocarbons enter the leach field, the sinks and showers in the maintenance facility would be plumbed to the wastewater recycling system that would treat the equipment washdown water.

5.2.2.3.2 Construction Wastewater

Wastewater generated during construction would consist of equipment washwater and piping and vessel hydrostatic test water. Construction impacts under the Modified Project could result from uncontrolled releases of non-storm water discharges. However, potential construction-phase non-storm water discharges would be mitigated through the implementation of BMPs identified in a construction-phase SWPPP. No additional impacts resulting from the Modified Project, related to construction

wastewater, have been identified. Sources and amounts of wastewater generated during construction (equipment wash water and piping and vessel hydrostatic test water) would remain the same as under the Approved Project.

5.2.2.3.3 Process Wastewater

Potential impacts associated with the process wastewater for the Approved Project include RO wastewater discharge to lined evaporation ponds. With the implementation of the BMPs and design parameters identified in a Report of Waste Discharge (ROWD) (and subsequent Waste Discharge Requirements), no significant water quality impacts are anticipated. No additional impacts resulting from the Modified Project in relation to process wastewater have been identified. Similar to the process wastewater description in the Commission Decision, extracted groundwater for the Modified Project would undergo RO treatment to remove dissolved solids for washwater applications and additional treatment would be utilized to meet current drinking water quality standards. Well water contains approximately 1,340 milligrams per liter (mg/L) of TDS. As with the Approved Project, after the RO process, wastewater from the Modified Project would contain approximately 5,000 to 7,000 mg/L of TDS. The Approved Project included provision for process wastewater discharge to two double-lined evaporation ponds (located in the main services complex), each designed to contain one year of discharge flow, previously estimated to be approximately 3 million gallons. The estimated wastewater effluent for the Modified Project would be the same as or less than that previously approved, so it is not anticipated that additional design requirements beyond those identified in the Commission Decision would be required for process wastewater treatment and disposal. As required in the Commission Decision, the design, construction, and operation of the evaporation ponds would be in accordance with RWQCB requirements, a ROWD would be filed with the RWQCB, and waste discharge requirements would be obtained for operation of the evaporation ponds.

5.2.3 Changes in Cumulative Environmental Impacts

The Commission Decision concluded that the Approved Project would not result in any significant cumulative impacts to water resources. Incremental impacts of the Modified Project on water resources are expected to be the same or slightly reduced compared to the Approved Project. As described in Section 1.4.1, Cumulative Scenario, no new reasonably foreseeable future actions beyond those assumed in the Commission Decision have been identified. Therefore, no increase in cumulative impacts under the Modified Project is anticipated.

5.2.4 Changes in LORS Conformance and Other Permits

In the Commission Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. The Commission identified the LORS listed below associated with water resources.

The Commission Decision identified the following potential regulatory permits required for the Approved Project:

- Construction Storm water Pollution Prevention Plan (RWQCB and State Water Resources Control Board (SWRCB));
- Industrial Storm water Pollution Prevention Plan (RWQCB and SWRCB);
- ROWD/Waste Discharge Requirements (RWQCB);
- Streamed Alteration Agreement (California Department of Fish and Game (CDFG));
- Section 404 Permit (United States Army Corps of Engineers); and
- Section 401 Water Quality Certification (RWQCB).

Note that no Waters of the United States exist on the Approved and Modified Project site and, therefore, federal wetland permitting is not required under Section 404, and a 401 Water Quality Certification is not required either for the Approved Project or the Modified Project.

A draft construction SWPPP was prepared for the Approved Project and was last submitted to the SWRCB on November 15, 2010. A revised SWPPP, to reflect the Modified Project, will be provided for review and approval. The modified SWPPP would be submitted and distributed in accordance with **SOIL&WATER-10**. A draft industrial SWPPP has not yet been prepared. An industrial SWPPP would be prepared and distributed in accordance with **SOIL&WATER-11**. A draft ROWD was submitted to the RWQCB on June 30, 2010. The draft ROWD requires revision to incorporate the Modified Project and resubmittal and approval through the RWQCB and distribution per **SOIL&WATER-2**.

There have been no identified regulatory changes since issuance of the Commission Decision that would necessitate additional permits. The Modified Project is not anticipated to necessitate any permits beyond those listed in the Commission Decision.

5.2.5 Changes in Proposed Mitigation

No new or more severe impacts requiring additional mitigation are anticipated to result from the Modified Project. The anticipated impacts associated with the Modified Project identified in this section will be confirmed after review of the hydrology, hydraulic, and sediment transport/scour analyses for the Modified Project.

5.2.6 Changes in Conditions of Certification

Minor modifications to the some of the Conditions of Certification are necessary to remove any reference to SunCatcher and replace with PV. Those Conditions of

Certification include **SOIL&WATER-1, 3, 8, 12, 13, and 16**. No other modifications to the Conditions of Certification are required to accommodate the Modified Project.