

emergency access roads. As such, the project will not impair the implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less than Significant Impact)

Once constructed, the PV solar facilities would be built to meet all relevant California building standards, including building code, electrical code, and fire code requirements, thereby minimizing the potential for ignition to occur at the facility. In addition, routine maintenance at the Hellman OGPf facility includes vegetation management to ensure a defensible space is maintained consistent with the requirements of OCFA, and CalGEM. The Hellman OGPf maintains a Fire Protection Plan and has a firewater system. The oil storage facility has fire monitors that could be used in the unlikely event of a fire at the PV solar site. The nearest fire station to the Hellman OGPf site is OCFA Station 44, which is less than a mile from the site. Because the Project would be built to modern code requirements, would be maintained to have a defensible space around the facility, has a fire firewater system on site, the Project operational impacts related to hazards resulting from wildland fires are less than significant.

3.4.10 Hydrology/Water Quality

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i. result in a substantial erosion or siltation on- or off-site;				
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The nearby San Gabriel River Estuary, which is hydrologically connected to the project site, is listed as an Impaired Waterbody, per the State Water Resources Control Board (SWRCB) 2014/2016 California Integrated Report, Clean Water Act Section 303(d) List/305(b) Report. Water quality impairments include copper, dioxin, indicator bacteria, nickel, and dissolved oxygen (SWRCB 2023).

Water use within the City's service area has been relatively stable in the past decade with an annual average of 3,482 AF for potable use. In fiscal year (FY) 2019-20, the City's water use was 3,273 AF of potable water (groundwater and imported). There is currently no recycled water use within the City's service area. In FY 2019-20, the City's water use profile was comprised of 70.4% residential use, 18.4% commercial, industrial, and institutional (CII) use, 0.5% large landscape/irrigation, with non-revenue water (NRW) comprising about 10.6% (Arcadis 2021).

The project site is not located within a 100-year flood zone, as designated by the Federal Emergency Management Agency (FEMA). The site is within Zone X, an area of 0.2% annual chance flood (i.e., 500-year flood plain); an area of 1% annual chance flood with average depths of less than 1 foot; an area with drainage areas less than 1 square miles; or an area protected by levees from 1% annual chance flood (FEMA 2023).

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less than Significant)

Construction

Project construction would include 4.57 acres of ground disturbance, including areas for solar array tables, equipment pads, underground power lines, and staging areas (see Table 2-4, Proposed Project Site Disturbance Areas). The initial site preparation would involve removal of the vegetative cover, and the removal of any miscellaneous debris and other deleterious material. Organic matter and other material that may interfere with the completion of the work would be removed from the limits of the construction area. The site would require minimal grading since it is already flat and grading is not necessary for the installation of the solar support structures. Limited grading may be needed for the equipment pads areas. The project would not involve any cut and fill, or the import/export of any soil.

In the absence of proper soil management, ground disturbance and construction could result in wind and water erosion and associated sedimentation of the San Gabriel River, LCWA wetland areas, and Haynes Cooling Channel. Construction-related activities that primarily result in sediment releases are related to exposing previously stabilized soils to potential mobilization by rainfall/runoff and wind. Erosion and sedimentation affects water quality and interferes with photosynthesis; oxygen exchange; and the respiration, growth, and reproduction of aquatic species. Additionally, other pollutants, such as nutrients, trace metals, and hydrocarbons, can attach to sediment and be transported off-site, which could contribute to degradation of water quality.

Non-sediment-related pollutants that are also of concern during construction relate to construction materials and non-stormwater flows and include construction materials (e.g., paint); chemicals, liquid products, and petroleum products used in construction or the maintenance of heavy equipment; and concrete-related pollutants.

Project construction impacts would be minimized through compliance with the Santa Ana Regional MS4 Permit (Order No. R8-2022-0008, NPDES No. CAS618000), which includes the City of Seal Beach, and the SWRCB Construction General Permit, which is the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Associated with Construction Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002). Because the proposed Project is greater than 1 acre in size, the applicant would be required to submit a Notice of Intent to the SWRCB in order to obtain approval to complete

construction activities under the Construction General Permit. This permit requires the discharger to perform a risk assessment for the proposed development (with differing requirements based upon the determined level) and to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). A Construction Site Monitoring Program that identifies monitoring and sampling requirements during construction is a required component of the SWPPP. The SWPPP is also required to include construction-phase Best Management Practices (BMPs) to be implemented. Typical BMPs that would be implemented during grading and construction of the proposed Project that would minimize degradation of surface water quality include erosion control, sediment control, waste/materials management, non-stormwater management, training and education, and inspections/maintenance/monitoring/sampling.

Proposed conduit trenches would be approximately 2 feet wide and 18 to 24 inches deep. Based on borings drilled for a geotechnical investigation of the Hellman Gas Plant Expansion, groundwater is present at a minimum depth of approximately 4 feet below ground surface (Wood 2018). Therefore, groundwater impacts are not anticipated during construction.

Through implementation of the requirements outlined in the Construction General Permit, construction-related impacts to surface water and groundwater would be minimized and impacts would be less than significant.

Operations

Panel washing would occur approximately once per year and would require approximately 2 days to complete. Approximately 1,500 gallons of water would be used during washing and no chemicals would be used. Water would be applied to the solar panels at a rate that would not result in runoff from the site. Wash water would be absorbed into the soil and vegetation underneath the panels. No other potential sources of water quality impairment would be introduced to the project site during operations. In addition, operational activities would be required to comply with the requirements of Seal Beach Municipal Code (SBMC) Chapter 9.20, Stormwater Management Program. SBMC Chapter 9.20 is enforced by City officials during the permit approval process. This chapter requires development projects to comply with the Orange County Drainage Area Management Plan (DAMP), which includes BMPs for properly storing waste material, to ensure the protection of water quality from stormwater runoff. As a result, operations-related impacts to surface water and groundwater would be minimized and impacts would be less than significant.

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (Less Than Significant)

As discussed for Threshold a), approximately 1,500 gallons of water would be used annually for panel washing. Water would be supplied from the City of Seal Beach water system. This small amount of water use would not substantially decrease groundwater supplies. The main source of water supply for the City is groundwater from the Orange County Groundwater Basin. Groundwater levels in this basin are managed within a safe basin operating range to protect the long-term sustainability of the basin and to protect against land subsidence. The Orange County Water District regulates groundwater levels in the basin by regulating the annual amount of pumping and setting the Basin Production Percentage for the water year. The Basin Production Percentage is the ratio of water produced from groundwater supplies within the district to all water produced within the district, from both supplemental sources and groundwater within the district (Arcadis 2021). As a result, the annual operational water demand of 1,500 gallons would not adversely impact groundwater supplies from the Orange County Groundwater Basin.

In addition, installation of solar arrays would not interfere with groundwater recharge, as stormwater would flow off the panels and would be absorbed into the adjacent unpaved, pervious ground surface, allowing for groundwater recharge. Therefore, impacts would be less than significant.

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in a substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows? (Less Than Significant with Mitigation Incorporated)**

The project site is currently vacant and covered in pervious surfaces. The project would introduce minimal new impervious surfaces to the site, including equipment pads. Proposed solar arrays would not increase impervious surfaces at the site, as stormwater would flow off the solar panels and onto the unpaved/pervious ground beneath the panels. Sheet flow of stormwater runoff would be maintained where possible, with water exiting the site in existing natural contours. The pattern and volume of runoff would not be substantially altered by the project. Vegetation would be allowed to regrow under the solar panels, which would minimize any project-related, long-term increased runoff associated with construction related ground disturbance, thus in turn minimizing potential soil erosion and off-site flooding. However, pending revegetation of the site, increased stormwater runoff could temporarily occur due to a lack of vegetation. Implementation of mitigation measure BIO-2 that limits the grading of the site and requires the existing vegetation to be cut and not removed would serve to reduce the potential for soil erosion. Increased runoff associated with ground disturbance could temporarily result in significant erosion induced water quality impacts. These impacts would be reduced to less than significant levels through implementation of Mitigation Measure HYD-1.

- d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (Less than Significant)**

As previously discussed, the project site is not located within a 100-year flood zone, as designated by FEMA. The site is within Zone X, an area of 0.2% annual chance flood (i.e., 500-year flood plain); an area of 1% annual chance flood with average depths of less than 1 foot; an area with drainage areas less than 1 square miles; or an area protected by levees from 1% annual chance flood. Therefore, the potential for flooding is very low. In addition, as part of the approved Southern Los Cerritos Wetlands Restoration Project, a 6-foot earthen berm would be constructed along the southern perimeter of the project site to prevent any hydraulic connection between the project site and the proposed Southern Los Cerritos Wetlands Restoration Project, located to the south of the project site (Moffatt and Nichol 2023). This berm would further reduce the potential for flooding on-site.

The solar tables would be mounted a minimum of 18 inches off the ground and the inverters would be mounted approximately 3 to 4 feet off the ground; therefore, in the unlikely event 1 foot of flooding occurs, the solar tables and inverters would not be affected. In the event collector cables, power cables, transformers, and disconnect switches are inundated, or partially inundated, by 1 foot of flood waters, no pollutants would be released to the environment during operations.

The project site is located approximately 1 mile from the Pacific Ocean. The City of Seal Beach Local Hazard Mitigation Plan indicates that the project site is located outside of the City's projected tsunami inundation zone (City of Seal Beach 2019). The western boundary of the Hellman Ranch Oil and Gas Facility is located adjacent to the Department of Water and Power Haynes Cooling Channel and therefore would potentially

be susceptible to sloshing of water during a seiche. However, the proposed solar field is located along the northeast boundary of the facility, not in proximity to the channel, and would therefore not be susceptible to inundation by seiche.

A sea level rise analysis was completed in 2019 for the Hellman Ranch Gas Plant (Moffatt and Nichol 2019). Sea level rise impacts were evaluated for years 2060 and 2100. Impacts were evaluated under dry weather conditions and a 50-year storm event. In addition, eight sea level rise scenarios were evaluated based on low-, medium-, and high-risk aversions. Potential flood sources included the culvert to the San Gabriel River and internal Hellman Channel, the Haynes Cooling Channel, the San Gabriel River, and ocean water overtopping Highway 1.

Based on this analysis, a sea level rise of 2.5 feet and above (up to 9.9 feet, including a 50-year storm) would inundate the proposed solar field. With the completion of the Southern Los Cerritos Wetlands Restoration Project, the +2.5 ft sea level rise scenario would not inundate the PV solar facility site. Under +3.2 ft and +3.7 ft sea level rise scenarios in the year 2060, the Haynes Cooling Channel east bank would be overtopped, and floodwater will inundate the PV solar facility site (Moffatt and Nichol 2019). The expected life of the PV solar facility is 25 to 30 years.

However, in the event flooding occurs because of sea level rise, no pollutants would be released to the environment, as storage of petroleum products and/or hazardous substances would not occur on-site. If flooding due to sea level rise became an issue for the solar facility then the equipment could be raised or removed. Therefore, impacts would be less than significant.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

As discussed in Thresholds a) and c) above, construction related water quality impacts would be addressed through implementation of a site-specific SWPPP and associated BMPs, and operational water quality impacts would be addressed through MM-HYD-1, Interim Soil Stabilization Plan. As a result, the project would not conflict with implementation of goals and policies of the Water Quality Control Plan, Santa Ana River Basin (Basin Plan). In addition, as discussed in Threshold b, groundwater impacts would not occur as a result of the project. Therefore, the project would not conflict with implementation of the 2014 Sustainable Groundwater Management Act, the 2020 City of Seal Beach Urban Water Management Plan, or the 2015 Orange County Water District Groundwater Management Plan. No impact would occur.

Avoidance, Minimization and/or Mitigation Measures

Mitigation Measure HYD-1: Interim Soil Stabilization Plan - Prior to issuance of a Notice to Proceed by the City of Seal Beach (City), an Interim Soil Stabilization Plan shall be developed to the satisfaction of the City, detailing measures that will be taken to prevent soil erosion subsequent to construction and pending revegetation of the site. Examples of soil stabilization measures include construction of temporary desilting basins, use of natural and/or synthetic soil binders (i.e., tackifiers and soil stabilizers), straw wattle installation at regular intervals within solar arrays and around construction area perimeters, and revegetation with site-appropriate native plants. Site monitoring shall be completed every six months and after rainfall events of 1.0 inch or greater to ensure that soil stabilization methods are continuing to be effective. In the event that erosion is observed during monitoring, corrective actions shall be taken immediately to prevent additional erosion. The Interim Soil Stabilization Plan shall be implemented under the supervision of the City.